Multinational Corporations and Indian Drug Industry

DR. SATWINDER SINGH

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Preface

MULTINATIONAL Corporations have emerged as one of the most remarkable phenomena of the post-World War II era. In this relatively short span of time they have left their mark not only on the economic but also on the political and social landscape of almost all the countries of the world. But whereas their increasing importance in the host countries is being recognised, it is generally felt that adequate information pertaining to their activities is not available with the governments of the host countries. The building up of a sound data base and careful analysis of data are absolutely necessary to improve policy formulations which in many cases are based only on doubtful presumptions. A clearer perspective on the manifold activities of these corporations will ensure that their activities promote and not hinder national development. The present study is a modest attempt in this direction. Drawing on a number of sources, the work first examines, against an international perspective, the structure of the pharmaceutical industry in India, tracing the place and role of drug transnationals therein. It then proceeds to determine the extent of market power of multinationals operating in India and its impact on their financial performance and through it on the country's balance of payments.

The work has grown out of a doctoral dissertation completed at the Gokhale Institute of Politics and Economics. I am extremely grateful to the authorities of the Institute, particularly to its Director at the time, Prof. V.M. Dandekar, for affording me necessary facilities to complete this work. Among the faculty of the Institute, my greatest debt of gratitude is to my Supervisor, Prof. S.V. Bokil, who provided valuable and constructive guidance and to Prof. K.K. Dasgupta who acted as my godfather all through my stay at Pune. Prof. B.S.R. Rao arranged a part of the data which would not have been possible without his active interest in the matter. I am grateful to all of them for their

immense courtesy. I would also like to express my gratefulness to Prof. S.K. Goyal of the Indian Institute of Public Administration for his valuable advice on methodological issues as also his help in checking on the consistency of my findings. Among visitors at the Institute, one who showed a keen interest in my work was Prof. J.S. Uppal of the State University of New York. I am sure he would be happy that the work is at last seeing the light of day.

I have kept to the last my duty to thank two friends, Dr. Ezat Mossalanejad and Dr. M.K. Datar. Both of them read the draft of the thesis and made many suggestions for its improvement. Dr. Ezat Mossalanejad also took upon himself the responsibility of overseeing the progress of my work and shared my concerns and anxieties. I find it hard to convey my gratitude to him in words.

Applied research often requires not only primary data but also secondary data. For the latter I have drawn heavily on the material made available to me by several agencies of the U.N., particularly its Centre on Transnational Corporations, and the Organisation of Pharmaceutical Producers of India, Department of Company Affairs, the Reserve Bank of India and the Bombay Stock Exchange. I am indebted to all of them.

Finally, I would like to thank Dr. H.K. Manmohan Singh, Jawaharlal Nehru Professor of Economics at the University, for his encouragement and manifold assistance in updating the work and bringing it out in the form of a book. At the publisher's end, Mr. Christopher Cecil extended so much support that I would have been lost without it. I am beholden to him.

SATWINDER SINGH

Punjabi University

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Introduction

THE Industrial Revolution ushered in an era of unprecedented industrial development based on the unhampered growth of capitalist economies. This growth on its rapidly widening path has accompanied from time to time the changes in organisational forms in the sphere of production. In the beginning it was individual proprietorship which emerged as the main organisational form. However, the introduction of new technologies and the emergence of national markets gave way to partnership as a device to overcome financial constraints. The next stage in this burgeoning evolution was the revolutionary idea of the Joint Stock company with limited liability. This form still remains an important entity of industrial organisation. The form remained prominent in a world dominated by national comparative advantage, international trade in finished commodities, and a framework of international trade bound by centre-periphery relationships. The developments after the Second World War led to a relative decline of this organisational form. The collapse of the colonial system of trade characterised by the spread of nationalism and independence intensified international differences in factor costs, and prevented movements in commodities due to efforts at import substitution. This led to a polarisation of the world in two groups, one consisting of Less Developed Countries (LDCs) and the other of advanced countries. The advanced countries themselves, because of technological process based on specialised division of production, came closer to each other through intra-industry trade relationships. These two factors led to a global view of production processes. This called for global reallocation of resources in accordance with difference in factor cost. Transnational (or multinational) corporations (MNCs) constituted a new organisational form which acted as a

vehicle which facilitated this technological and resource-based transformation on a global scale. Transnational corporations, also known as international or global corporations, have been one of the most remarkable phenomena of the post-war period. The growth of these corporations has generated widespread debate among scholars from all walks of the academic world. This debate has led to a large number of research projects undertaken by individuals and private and public institutions all over the world.[1] There has been a constant flow of literature on various aspects of MNCs from these diverse sources. In fact, it is a little disconcerting to note that '. . . . very soon the sheer weight of all the materials will be so great that no individual scholar will be able to keep up with the important contributions.'[2] Even a casual review of the literature since these comments by Prof. Vernon would show that this has become true, though the factual data on the activities of MNCs are still not available in adequate measure. Despite this, a careful survey would reveal a broad overview of MNCs' activities in the world economy. Following is such a brief overview. This overview begins with the definitions of MNCs and discusses their dimensions and principal characteristics. This overview is followed by an examination of MNCs' dimensions in India in terms of their number, assets, country and industry distribution. We then discuss the motivations and consequences of multinationals' operations abroad. Towards the end of this chapter we state our research problem, its objectives, its methodology and the data sources. We also discuss the work done so far in this field and see what further needs to be done in this area.

Definitions of MNCs[3]

The term 'multinational corporations' (MNCs) was first used and defined by David E. Lilienthal as 'Corporations which have their home in one country but operate and live under the laws and customs of other countries as well."[4] He further clarified that by 'operating' he particularly meant industrial or commercial operations abroad which directly involve managerial responsibility.[5] A number of definitions have since been used by authors to define MNCs. These definitions are based on one or more of the following criteria : structure, performance or behaviour.[6] The definitions using structural criteria are based on such factors as the number of countries in which the firm is operating and the

degree of ownership therein. The definitions on the performance criteria are based on some performance features like sales or assets. And definitions on the behavioural criteria account for such features, whether the firm thinks internationally in terms of its investment decisions considering world as a large market. On the basis of their orientation, corporations are also distinguished into "ethocentric"—home country oriented, "polycentric"—host country oriented or "geocentric"—world oriented.[7]

There is, however, no general consensus over the definitions of MNCs. Authors have used different definitions for their purposes. The United Nations secretariat defines MNCs broadly to cover all enterprises which control assets—factories, mines, sales offices and the like—in two or more countries.[8] We adhere to this definition for our purpose.

The terms "corporation", "firm", "company" or "enterprise" are generally used synonymously in the literature. We also make no specific distinction between them, though we would prefer the term 'transnational' to others. A foreign branch is part of an enterprise that operates abroad. An affiliate is also a part of an enterprise that operates abroad either in the form of a subsidiary with majority or sometimes as little as 25 per cent control of the voting stock by the parent, or in the form of an associate, in which case as little as 10 per cent of voting stock may be judged adequate to satisfy the criteria.[9]

The activities of MNCs can be classified on the basis of three broad considerations : (a) Backward vertical operations, (b) Forward vertical operations, and (c) Horizontal operations.

Backward vertical operations represent the extension of purchasing strategies of the investing firms. These are undertaken primarily to obtain unhindered, cheaper, and more reliable supplies of raw materials or processed inputs for the investing company. The arrangements of this type are mainly present in firms engaged in extractive industries.

Forward vertical activities represent the extension of the sales strategies of the investing firm. The primary functions of these firms are to advance or protect their markets or supply points so as to ensure stable production. Firms engaged in large export business are interested in evolving such strategies. Firms which are interested in locating production facilities abroad may not prominently figure in this area.

Horizontal operations largely comprise foreign manufacturing activities which may or may not be harmonised with each other or with domestic activities. This category of operations are currently attracting the maximum attention of host and investing countries. These operations are usually classified in high technology or intermediate technology investments.

MNCs : Dimensions and Characteristics

If firms with one or more foreign affiliates are taken as multinationals, then a survey by the commission of the European communities shows that in 1973 there were 9481 such enterprises operating in the world. Out of these, 2567 alone were based in the United States, 4532 were based in the European Economic Community and 2382 in other countries (Table 1.4). As regards the growth of overseas affiliates of these enterprises, a tremendous rise has been recorded in the past. Available data show that between 1950 and 1966, the number of US affiliates increased by more than three-fold from 7,000 to 23,000. Data for 134 UK and European based firms and 75 Japanese and other parent firms show that between 1962 and 1970, these firms established abroad respectively 2279 and 287 new manufacturing subsidiaries.[10]

The data on direct investment abroad of developed economies by major countries of origin appear in Table 1.1. Data, for the latest available year, 1976, put the total stock of direct investment abroad by developed countries at $ 287.3 billion. The United States' share in this accounts for $ 137.2 billion (47.6 per cent) followed by UK $ 32.1 billion (11.2 per cent), West Germany $ 19.9 billion (6.9 per cent), Japan $ 19.4 billion (6.7 per cent) and Switzerland $ 18.6 billion (6.5 per cent). Thus, these five countries account for nearly 80 per cent of total stock of foreign direct investment of developed countries. The table shows that between 1967 and 1976 the aggregate stock of foreign direct investment of these countries has grown at the rate of 19 per cent per annum. At the country level we notice that in contrast to the US and UK, direct investments by West Germany, Japan and Switzerland have shown rapid growth and that these countries accounted for 20 per cent of total investment in 1976 as compared to only 9 per cent in 1967. But it is important to note that all the increase in the foreign investment of these countries may not have occurred by way of fresh flow of capital from abroad. It is possible (as we

TABLE 1.1

Stock of Direct Investment Abroad of Developed Market Economies, by Major Country of Origin, 1967-1976

Country of origin	*Billions of dollars, end of*					*Percentage distribution*				
	1967	*1971*	*1973*	*1975*	*1976*	*1967*	*1971*	*1973*	*1975*	*1976*
United States	56.6	82.8	101.3	124.2	137.2	53.8	52.3	51.0	47.8	47.6
United Kingdom	17.5	23.7	26.9	30.8	32.1	16.6	15.0	13.5	11.9	11.2
Germany, Federal Republic of	3.0	7.3	11.9	16.0	19.9	2.8	4.6	6.0	6.2	6.9
Japan	1.5	4.4	10.3	15.9	19.4	1.4	2.8	5.2	6.1	6.7
Switzerland	5.0	9.5	11.1	16.9	18.6	4.8	6.0	5.6	6.5	6.5
France	6.0	7.3	8.8	11.1	11.9	5.7	4.6	4.4	4.3	4.1
Canada	3.7	6.5	7.8	10.5	11.1	3.5	4.1	3.9	4.1	3.9
Netherlands	2.2	4.0	5.5	8.5	9.8	2.1	2.5	2.8	3.2	3.4
Sweden	1.7	2.4	3.0	4.4	5.0	1.6	1.5	1.5	1.7	1.7
Belgium-Luxembourg	2.0	2.4	2.7	3.2	3.6	1.9	1.5	1.4	1.2	1.2
Italy	2.1	3.0	3.2	3.3	2.9	2.0	1.9	1.6	1.3	1.0
Total above	101.3	153.3	192.5	244.8	271.5	96.2	96.8	96.9	94.3	94.2
All other (estimate)	4.0	5.1	6.3	15.1	16.8	3.8	3.2	3.1	5.7	5.8
Grand Total	105.3	158.4	198.8	259.9	287.3	100.0	100.0	100.0	100.0	100.0

Note : Totals may not add up because of rounding off.

Source : United Nations, *TNCs in World Development : A Re-examination*, 1978, Annex III, Table 32, p. 236.

would see in Chapter 5 in the case of foreign drug companies in India) that a large part of increase in foreign investment actually consists of reinvested earnings generated from within the local economy without any fresh flow of capital from abroad having taken place.

A breakdown of direct investment stock by host countries appears in Table 1.2. The table shows that out of a total stock of foreign direct investment worth $ 259 billion in 1975, $ 191.66 billion, i.e., 74 per cent was invested in developed market economies and only $ 67.34 billion, i.e., 26 per cent was invested in developing countries. Out of $ 191.66 billion worth of foreign direct investment stock in developed countries, $ 90.65 billion, i.e., 47 per cent is accounted for by Canada, the US, and UK. Thus these countries which are exporters of direct investment are also recipient of investment from developed countries. Out of $ 67.34 billion worth of foreign direct investment stock in developing countries, OPEC account for $ 15.54 billion (23 per cent), tax havens account for $ 7.77 billion (12 per cent) and the rest for $ 43.77 billion (65 per cent). The table shows that the share of foreign investment stock of developed countries has risen faster than that for developing countries, as a result the share of developed countries in the total foreign direct investment stock has risen from 69 per cent in 1967 to 74 per cent in 1975 and that of developing countries has declined from 31 per cent to 26 per cent. The prevailing similar institutional and social similarities have facilitated the spread of MNCs in these countries. But although the developing countries account for only one quarter of the total world direct investment stock, it is significant in view of the fact that this share is greater than their share in world GNP.

The industry distribution pattern of foreign investment stock of five principal countries is presented in Table 1.3. This table shows that country pattern of investment differs substantially. Thus in 1974, the share of total foreign investment stock in manufacturing ranged from a low of 35 per cent in the case of Japan to a high 71 per cent for West Germany with the USA, UK, and Canada's share varying between 45 per cent and 50 per cent. The average for these countries shows that in 1974 around 49 per cent of their total stock of overseas investment was invested in manufacturing, 29 per cent in services and 22 per cent in extractive industries. The table shows that the share of manufacturing in

TABLE 1.2

Stock of Direct Investment Abroad of Developed Market Economies by Host Country : 1967, 1971 and 1975

Host country and country group	*1967*		*1971*		*1975*	
	Total	*Percentage*	*Total*	*Percentage*	*Total*	*Percentage*
Total value of stock (billions of dollars)	105	100	158	100	259	100
Distribution of stock Developed market economies of which	72.45	69	113.76	72	191.66	74
Canada	18.90	18	26.86	17	38.85	15
United States	9.45	9	14.22	9	28.49	11
United Kingdom	8.40	8	14.22	9	23.31	9
Germany, Federal Republic of	3.15	3	7.90	5	15.54	6
Others	31.50	30	50.56	32	85.47	33
Developing countries of which	32.55	31	44.24	28	67.34	26
OPEC[1]	9.45	9	11.06	7	15.54	.6
Tax Havens[2]	2.10	2	4.74	3	7.77	3
Others	21.00	20	26.86	17	44.03	17

1. Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Arab Jamahiriya, Nigeria, Qatar, Saudi Arabia, UAE and Venezuela.
2. Bahamas, Barbados, Bermuda, Cayman Islands, Netherland Antilles and Panama.

Note : Details may not add up because of rounding off.

Source : Derived from United Nations, *TNCs in World Development : A Re-examination*, 1978; Annex III, Table III-33, p. 237.

TABLE 1.3

Selected Developed Market Economies : Stock of Direct Investment Abroad by Major Industrial Sector in 1971 and 1974

Country and industrial sector	*Total stock*			
	1971		*1974*	
	Millions of dollars	*Per-centage*	*Millions of dollars*	*Percen-tage*
(1)	(2)	(3)	(4)	(5)
United States				
Total industry	1,01,313	100.0	1,37,244	100.0
Extractive	30,989	30.6	36,771	26.8
Manufacturing	44,370	43.8	61,062	44.5
Services	25,954	25.6	39,411	28.7
Banking and insurance	9,726	9.6	16,392	11.9
United Kingdom				
Total industry	23,717	100.0	31,277	100.0
Extractive	8,051	33.9	8,747	28.0
Manufacturing	10,043	42.3	14,131	45.2
Services	5,633	23.8	8,399	26.8
Banking and insurance	1,212	5.1	1,410	4.5
Canada				
Total industry	6,524	100.0	9,390	100.0
Extractive	938	14.4	1,963	20.9
Manufacturing	3,437	52.7	4,729	50.4
Services	2,149	32.9	2,698	28.7
Banking and insurance	405	6.2	622	6.6
Germany, Federal Republic of				
Total industry	7,277	100.0	19,915	100.0
Extractive	350	4.8	1,419	7.1
Manufacturing	5,796	79.6	14,032	70.5
Services	1,131	15.6	4,464	22.4
Banking and insurance	494	6.8	1,941	9.7
Japan				
Total industry	3,962	100.0	10,620	100.0
Extractive	892	22.5	2,778	26.2
Manufacturing	1,092	27.6	3,723	35.0
Services	1,978	49.9	4,119	38.8
Commerce, banking and insurance	843	21.3	2,376	22.4

Source : United Nations, *TNCs in World Development: A Re-examination*, 1978, Table III-38, p. 243. (Adopted in abridged form).

the total foreign investment has risen over the period 1971 to 1974. But the more interesting feature worth noting is the growing investment in the services sector, especially banking, insurance, tourism and consultancy. Banking in particular has grown phenomenally. In many cases banks are said to have been attracted abroad by the prior international expansion of their clients. Between 1965 and 1972, US banks more than tripled their foreign location (branches, representative affiliates, subsidiaries) from 303 to 1009. In 1972 alone, US banks opened 106 foreign locations and Japanese opened 25.[11]

In the preceding sections we mentioned in brief the number and foreign investment stock of MNCs. It should be mentioned that private foreign direct investment takes place predominantly through the transnational corporations and the two terms are often used interchangeably in the literature to exclude any investment taking place through official sources.

Turning to the discussion of the remaining features of MNCs, we note that one of the essential characteristics of MNCs is to have a sizeable cluster of foreign branches and affiliates. It can be seen in Table 1.4 that out of a total of 9481 MNCs in 1973, 4255 (45 per cent), i.e., nearly half had affiliates in one host country, 1,500 (16 per cent) had affiliates in two host countries, 857 (9 per cent) had affiliates in three host countries, and 544 (6 per cent) had affiliates in four host countries. Thus 7156, i.e., 75 per cent of a total of 9481 MNCs had affiliates in between one and four host countries and only 2325, i.e., 25 per cent had affiliates in more than four host countries.

TABLE 1.4

Firms with One or More Foreign Affiliates, by the Number of Host Countries, 1973

Number of host countries	*Number of firms based in*				
	European Economic Community	*United States*	*Other countries*	*Total*	
				Number	*Percentage of grand total*
1	1,807	1,136	1,312	4,255	44.9
2	783	334	383	1,500	15.8
3	454	206	197	857	9.0
4	293	140	111	544	5.7
5	232	95	82	409	4.3
6	144	88	51	283	3.0
7	128	75	31	234	2.5
8	92	45	32	169	1.8
9	78	56	29	163	1.7
10	54	44	17	115	1.2
11	45	37	22	104	1.1
12	41	37	14	92	1.0
13	34	22	12	68	0.7
14	43	26	12	81	0.9
15	29	25	11	65	0.7
16	23	17	5	45	0.5
17	20	14	8	42	0.4
18	11	25	5	41	0.4
19	26	14	5	45	0.5
20	22	18	5	45	0.5
More than 20	173	113	38	324	3.4
Grand Total	4,532	2,567	2,382	9,481	100.0
(Percentage)	47.8	27.1	25.1	100.0	

Source : United Nations, *TNCs in World Development : A Re-examination*, 1978, Annex III, Table III-8, p. 211.

Another striking feature of MNCs is the predominance of large size firms. Available sales data for 650 of the largest MNCs in 1971 shows that out of a total sales worth $ 773 billion of these corporations, each of the top four MNCs had sales over $ 10 billion (total $ 76 billion), 12 had sales between $ 5 billion and $ 10 billion (total $ 78 billion) and 195 had sales between $ 1 billion and $ 5 billion (total $ 382 billion). Thus these 211 MNCs alone accounted for $ 536 billion or 70 per cent worth of total sales of 650 of the largest corporations in the world.[12]

Closely related to the large size of MNCs is their predominantly oligopolistic character. Frequently they are also characterised by the importance of new technologies or special skills or of product differentiation and enormous advertising which helps them to sustain and/or reinforce their oligopolistic nature. Although this is known to be a widely followed practice, no systematic data are as yet available in this regard. Concentration in high technology industries is chiefly a characteristic of US investment. Much of the expansion of US manufacturing affiliates abroad has been in production of "skill-oriented" products in which R and D contributes a relatively higher percentage of sales and where an oligopolistic structure is prevalent. Chemicals, machinery, electrical products and transport equipment account for 60 per cent of all manufacturing investment of the USA and around 50 per cent of that of UK. The technological strength of US MNCs in major chemical and automotive industries has given that country a dominant position in these fields.[13]

Finally, an essential feature of MNCs is their majority ownership holding in their affiliates operating both in the developed and developing countries alike. This behaviour is characteristic of most of the MNCs with a few exceptions as those from Japan which hold a relatively lower equity share in their affiliates in developing countries. Thus in 1967 out of 4879 affiliates of US MNCs in developed countries, 3570 (67 per cent) were wholly owned (equity holding more than 95 per cent), 936 (18 per cent) were majority owned (equity holding between 50-95 per cent) and only 373 (7 per cent) were minority owned (equity holding less than 50 per cent). And in the same year, out of 2381 affiliates of US MNCs in developing countries, 1573 (61 per cent) were wholly owned, 521 (20 per cent) were majority owned and only 287 (11 per cent) were minority owned. The ownership data for UK

based MNCs reflects similar features. Thus, by the end of 1965, out of 3129 affiliates of UK MNCs in developed countries, 1875 (60 per cent) were wholly owned, 493 (16 per cent) were majority owned and a relatively higher number, i.e., 3129 (24 per cent) were minority owned. At the same time, out of a total of 2033 affiliates of UK MNCs in developing countries, 1274 (63 per cent) were wholly owned, 260 (13 per cent) were majority owned and 499 (25 per cent) were minority owned. As against this, the ownership pattern of 862 Japanese MNCs operating in developed countries in 1970 shows that 570 (64 per cent) were wholly owned, 164 (19 per cent) were majority owned and 128 (15 per cent) were minority owned. And in the same year, out of a total of 1336 affiliates of Japanese MNCs in developing countries, only 325 (23 per cent) were wholly owned, 519 (37 per cent) were majority owned and 492 (35 per cent) were minority owned.[14] One of the reasons for Japanese MNCs having relatively lower equity holding in their affiliates in developing countries is that most of these affiliates are engaged in backward vertical operations to ensure the availability of cheaper or more reliable supplies of raw materials or processed goods for the investing company.

It should also be noted in passing in this section that MNCs are also making inroads in the centrally planned economies, especially by way of industrial cooperation agreements, production sharing or co-production arrangements. These arrangements increased by three-fold from 600 in 1973 to 1800 in 1976 and have grown especially in industries like motor vehicles, electrical engineering, electronics, chemicals, building machinery and mining equipments.[15] Joint ventures are another common form of co-operation in east-west enterprises. In 1977 there were 150 such joint ventures in Yugoslavia with foreign contributions amounting to US $ 200 million, seven in Rumania, and three in Hungary. The presence of MNCs in USSR is felt in certain industries like the automobiles where half of the passenger car supply comes from Fiat—a plant set up with Italian collaboration. MNCs have also been invited to participate in copper and natural gas projects in Siberia. The former involves an investment of $ 1 billion to $ 2 billion with annual production running in several thousand tonnes and the latter is meant to meet a major part of the entire natural gas production of USSR.[16]

MNCs in India

Transnational corporations operate in India in two principal ways : (i) through the establishment of branches; and (ii) through Indian subsidiaries. Section 591 of the Companies Act, 1956 defines branches as under :[17]

> "(a) Companies incorporated outside India which, after the commencement of this Act, establish a place of business within India; and
> (b) Companies incorporated outside India which have, before the commencement of this Act, established a place of business within India and continue to have an established place of business within India at the commencement of this Act."

The definition of a subsidiary of foreign company as such is not given in the Companies Act, but Section 4 of this Act vaguely gives the meaning of a Company as one which shall be deemed to be a subsidiary of another. It reads as follows :[18] "(1) For the purposes of this Act, a company shall, subject to the provisions of sub-section (3), be deemed to be a subsidiary of another if but only if—

> (a) that other controls the composition of its Board of Directors; or
> (b) that other holds more than half in nominal value of its equity share capital; or
> (c) the first-mentioned company is a subsidiary of any company which is that other's subsidiary."

We infer from this reading of the Companies Act that a foreign subsidiary is one which is incorporated under the Companies Act, 1956 and whose at least 50 per cent of the total equity is held by an individual or a corporate body abroad. It should be noted here that the main difference between a branch and a subsidiary is more of a legal nature than operational, in the sense that barring the local equity participation by subsidiaries, both the branches and the subsidiaries operate in common fields, though as we would see in the following, branches are more dominant in agriculture and allied activities, commerce, trade and finance, and community and business services, and subsidiaries in processing and manufacture.

Table 1.5 presents ten-year data (1968-69 to 1978-79) regard-

ing the number and assets position of branches and subsidiaries. The striking feature that can be readily noticed in this table is that whereas the number of both the branches and subsidiaries has considerably declined over this ten-year period, the assets of the remaining companies in the group have registered a tremendous increase. Thus the branches which totalled 561 in 1969-70 came down to 510 in the mid-seventies and further to only 358 in 1978-79. But their assets during this period increased from Rs. 1285.9 crores to Rs. 2129.8 crores and further to Rs. 2401.4 crores in 1978-79. Thus, whereas the total number of branches during this period declined by nearly one-third, their assets increased

TABLE 1.5

Number and Assets Position of Branches and Subsidiaries of TNCs in India : 1968-69—1978-79

(Rs./Crores)

Year	*Branches*			*Subsidiaries*		
	Total No.	*No. for which assets data are available*	*Assets*	*Total No.*	*No. for which assets data are available*	*Assets*
1	*2*	*3*	*4*	*5*	*6*	*7*
1968-69	—	—	—	223	223	1129.40
1969-70	561	529	1285.90	—	—	—
1970-71	543	—	—	217	217	1078.10
1971-72	541	295	1160.30	207	181	1145.20
1972-73	538	452	1672.80	195	195	1267.70
1973-74	540	434	1790.40	188	188	1363.70
1974-75	510	424	2129.80	183	173	1519.30
1975-76	481	393	2084.40	171	161	1626.20
1976-77	482	396	2178.30	161	161	1649.60
1977-78	473	368	2390.10	146	146	1741.60
1978-79	358	288	2401.40	125	125	1706.60

Sources : (1) Research & Statistics Division, Department of Company Affairs, Ministry of Law, Justice & Company Affairs, Government of India, (2) Lok Sabha Debates, April 1978, March 1979, (3) Rajya Sabha Debates, July 1979.

by nearly 100 per cent. It should be noted here that the mentioned assets belong to only those branches for which data could be attained. If the assets data for all the branches (appearing in Column 2) had been available, the assets figure would probably be much higher.

In the case of subsidiaries we notice a similar picture as that for branches. Thus, whereas their total number declined from 223 in 1968-69 to 183 in 1974-75 and further to only 125 in 1978-79, the total assets during this period increased from Rs. 1129.4 crores to Rs. 1519.30 crores and further to Rs. 1706.60 crores by the end of the seventies. This indicates that whereas, during this ten-year period the total number of subsidiaries declined by half, their assets, nevertheless, increased by around 50 per cent. However, along with these some more observations are required on Table 1.5.

To begin with, it should be noted that a large fall in the number of both the branches and subsidiaries that we notice in Table 1.5 is primarily owing to the Foreign Exchange Regulation Act (FERA) promulgated in 1973. This Act laid down that all the foreign companies operating in India dilute their equity to 40 per cent in two years time. Exemption was granted in the case of companies employing high technology and/or those predominantly export-oriented. Such companies could retain foreign equity upto a maximum of 74 per cent. As a result of this enactment, a number of branches who have diluted their equity have turned into Indian subsidiaries in relation to their foreign parents. And where their equity holding has come to below 50 per cent they are being regarded as Indian companies. Similar is the case with majority equity holding subsidiaries, many of whom have diluted their foreign equity holding according to their level of technology and/or export activities. As a consequence, the number of branches as well as subsidiaries is on the decline. But this decline in number, as is obvious, is not due to liquidations, take-overs or nationalisation. This decline is more of a 'techno-legal' nature and is in no way indicative of a fall in the importance of foreign companies in India.[19]

Secondly, as we pointed out, despite a fall in the number of branches and subsidiaries, the assets of the remaining companies in the group have risen over the ten-year period. This indicates that the companies which have withdrawn from the group have not

caused a similar decline in the value of assets.[20] If the size of companies could be kept constant over the period under reference, then the rise in the value of assets would be more impressive. This means that companies which have disappeared from the list because of reasons outlined above, but nevertheless are operating in India, make for a large under-estimation of assets growth.

Branches : Distribution by Country

Table 1.6 shows the country of domicile, the respective number and assets position of branches at three periods of time 1969-70, 1973-74 and 1978-79. It can be seen from the table that the highest number of branches are in the UK and USA. But the number of branches from those two countries has declined from 351 to 189 in the case of UK and from 84 to 64 in the case of the USA, over the ten-year period, 1969-70 to 1978-79. However, their assets during this period increased by nearly 100 per cent in the case of UK branches, from Rs. 823.5 crores to Rs. 1658.58 crores, and by 126 per cent in the case of US branches, from Rs. 237.0 crores to Rs. 535.21 crores. Similar picture prevails in the case of branches from other countries like Japan, France and the Netherlands. In some cases, however, the assets have declined along with a decline in the number, indicating that the outgoing companies constituted a major portion of assets in the total set.

The data in Table 1.6 show that a total of 288 branches operating in India in 1978-79 held assets worth Rs. 2401.35 crores in that year. In this, 172 (60 per cent of the total 288) branches from UK had a share of Rs. 1658.58 crores (69 per cent) and 52 (18 per cent) branches from USA had a share of Rs. 535.21 crores (22 per cent). Thus 224 branches (78 per cent of total) from these two countries held assets worth Rs. 2193.79 crores (91 per cent of total). The dominance of UK branches reflects India's colonial ties with that country and that of US branches reflects the superior technical and managerial skills of companies from that country which has made it a home of leading MNCs in the post-war era.

Subsidiaries : Distribution by Country

Table 1.7 shows the country of domicile, the number, the share capital and the assets position of subsidiaries operating in India

TABLE 1.6

Country of Domicile, Number and Assets Position of the Branches Operating in India During 1969-70, 1973-74 and 1978-79

(*Assets in Rs. /Crores*)

S. No.	Domicile	1969-70				1973-74				1978-79			
		No.	Cos. for which data are available	Assets	% of total	No.	Cos. for which data are available	Assets	% of total	No.	Cos. for which data are available	Assets	% of total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	United Kingdom	351	341	823.5	64.04	319	283	1238.50	69.18	189	172	1658.58	69.07
2.	USA	84	80	237.0	18.43	88	72	380.9	21.28	64	52	535.21	22.29
3.	Japan	18	17	33.8	2.63	21	14	23.0	1.28	17	16	63.75	2.65
4.	West Germany	13	11	4.8	0.37	12	8	3.3	0.18	5	3	2.57	0.11
5.	Pakistan	12	11	3.4	0.26	6	4	2.5	0.14	6	4	2.47	0.10
6.	Switzerland	10	9	1.9	0.15	11	8	2.3	0.13	5	3	0.86	0.04
7.	France	8	8	11.5	0.89	8	5	22.9	1.28	7	6	50.94	2.12
8.	Netherlands	8	6	12.5	0.97	6	4	25.7	1.44	5	3	74.46	3.10

(Contd.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
9.	Canada	7	7	0.1	Neg.	7	3	0.6	0.03	6	3	0.34	0.01
10.	Hong Kong	7	6	80.0	6.22	5	4	0.3	0.02	4	1	Neg.	—
11.	Italy	6	4	29.0	2.26	5	2	2.4	0.13	5	3	1.45	0.06
12.	Sweden	6	5	1.1	0.09	5	4	1.6	0.09	4	3	0.07	Neg.
13.	Australia	4	4	0.8	0.06	4	3	0.8	0.04	4	3	0.02	Neg.
14.	New Zealand	3	3	2.2	0.17	3	3	2.9	0.16	N.A.	N.A.	—	—
15.	Yugoslavia	3	3	19.8	1.54	3	3	52.6	2.13	3	3	4.74	0.20
16.	Rest	21	14	24.5	1.91	37	14	30.0	2.48	34	13	5.89	0.25
	Total	561	529*	1285.9	100.0	540	434	1790.3	100.0	358	288	2401.35	100.0

*Excludes 32 aviation and shipping companies that do not maintain separate accounts in India.

Sources : (1) Research and Statistics Division, Department of Company Affairs, Ministry of Law, Justice & Company Affairs, GOI.

(2) B. Datta and Shadi Lall, "Branches and Subsidiaries of foreign companies operating in India," *Company News and Notes*, August 1 and 16, 1970.

(3) D.K. Ghosh, "MNC in the Indian Economy," *Company News and Notes*, Jan. 1975.

(4) D.K. Ghosh, "TNC in India, Position and Performance 1973-74," *Company News and Notes*, Feb. 1977.

at three periods of time : 1968-69, 1973-74 and 1978-79. The table shows that as in the case of branches, subsidiaries from the UK and USA have a dominant position among the total subsidiaries. And although the number of subsidiaries from these two countries has declined from 152 to 86 in the case of UK and 33 to 19 in the case of US over the period 1968-69 to 1978-79, their corresponding assets have risen from Rs. 713.50 crores to Rs. 1050.35 crores (47 per cent rise) in the case of UK subsidiaries and from Rs. 177.50 crores to Rs. 227.79 crores (28 per cent rise) in the case of US subsidiaries. A similar picture prevails in the case of subsidiaries from other countries such as West Germany, Italy and Canada. And although the number of subsidiaries from these countries is small as compared to those from UK and USA, the rise in their net assets over the ten years, 1968-69 to 1978-79, is much higher (Column 18). The overall dominance of subsidiaries from UK and USA is however evident from the fact that out of a total of 125 subsidiaries operating in India in 1978-79, 105 are from these two countries—86 from UK and 19 from USA, with assets worth Rs. 1278.14 crores, i.e., 75 per cent of the total assets worth Rs. 1706.57 crores of all the subsidiaries in that year.

Some comments about the share capital of subsidiaries are called for. Columns 6 through 11 in Table 1.7 depict the position regarding share capital of subsidiaries. Column 11 shows that with the exception of Swedish subsidiaries which registered a decline in their share capital owing to fall in their number from 9 to 3 over the period 1968-69 to 1978-79, all the other subsidiaries recorded an increase in their share capital—which in some cases, as in the case of West German subsidiaries, is more than three-fold. Aggregate data for all the subsidiaries show that their share capital over the ten years increased by around 50 per cent—Rs. 240.73 crores to Rs. 360.05 crores. The pattern of foreign equity holding (Column 10) shows that with the exception of Italian subsidiaries, the rest of the subsidiaries from other countries have less than 100 per cent foreign equity holding. The aggregate data for 125 subsidiaries shows that on an average foreign parents hold around 60 per cent equity in their subsidiaries in India.

Branches : Distribution by Industry

A breakdown of distribution of branches by industry appears

TABLE

Country of Domicile, Number, Share Capital and Assets Position of

S. No.	Domicile	Numbers			Share Capital (SC)					
		1968-69	1973-74	1978-79	1968-69	1973-74	1978-79 Amount	9 as % SC held by the parent	8 as % of 8	Per cent +/− in SC in 1978-79 over 1968-69
1	2	3	4	5	6	7	8	9	10	11
1.	UK	152	131	86	157.40	190.80	201.18	120.50	59.90	27.81
2.	USA	33	24	19	24.50	32.50	46.93	28.78	61.32	91.55
3.	Switzerland	12	11	6	14.60	11.40	15.33	10.54	68.75	5.00
4.	Sweden	9	8	3	10.90	12.00	8.36	4.39	52.51	−23.30
5.	West Germany	5	5	4	7.60	14.20	28.14	14.38	51.10	270.26
6.	Italy	3	3	2	1.60	1.60	3.13	3.13	100.00	95.62
7.	Canada	2	2	2	12.40	18.90	30.63	16.90	55.17	147.02
8.	Japan	1	1	—	1.60	1.60	—	—	—	—
9.	Panama	1	1	1	3.90	5.60	10.05	7.56	75.22	93.85
10.	Denmark	1	—	1	0.50	—	Neg.	Neg.	—	—
11.	Australia	1	—	—	0.30	—	—	—	—	—
12.	Bahama Islands	1	1	—	1.80	1.80	—	—	—	—
13.	Holland	1	—	—	3.60	—	—	—	—	—
14.	Hungary	1	—	—	0.03	—	—	—	—	—
15.	Netherlands	—	1	1	—	6.80	16.30	9.78	60.00	139.71*
	Total	223	188	125	240.73	297.20	360.05	215.96	60.00	49.58

*Increase over 1973-74.

Source : As for Table 1.6.

1.7

Subsidiaries Operating in India during 1968-69, 1973-74 and 1978-79

(*Rs./crores*)

Total Net Assets (TNA)						
1968-69		1973-74		1978-79		Percent +/− in TNA in 1978-79 over 1968-69
Amount	% of total	Amount	% of total	Amount	% of total	
12	13	14	15	16	17	18
713.50	63.18	829.00	60.79	1050.35	61.55	47.21
177.50	15.72	176.90	12.97	227.79	13.35	28.33
66.00	5.84	75.40	5.53	60.42	3.54	−8.45
44.50	3.94	48.80	3.58	44.26	2.59	−0.54
26.50	2.35	66.80	4.90	117.91	6.91	344.94
5.20	0.46	9.60	0.70	15.57	0.91	199.42
48.30	4.28	85.10	6.24	103.89	6.09	115.09
2.40	0.21	2.80	0.21	—	—	—
11.50	1.02	19.30	1.42	26.86	1.57	133.57
1.70	0.15	—	—	Neg.	—	—
0.40	0.04	—	—	—	—	—
9.80	0.87	8.20	0.60	—	—	—
22.10	1.96	—	—	—	—	—
0.001	Neg.	—	—	—	—	—
—	—	41.80	3.07	59.52	3.49	—
1129.401	100.0	1363.70	100.0	1706.57	100.0	51.10

in Table 1.8. This table shows that the number of branches listed under all the nine broad headings has declined by one-third over the ten-year period, 1969-70 to 1978-79. In 1978-79, the highest number of branches, 85, were operating in agriculture and allied activities (barring one, all were engaged in plantation) followed by those engaged in commerce, trade and finance, 68; community and business services, 58; processing and manufacturing, 47; transport, communication and storage, 35; liaison and representative offices, 28; construction and utilities, 21; personal and other services, 9; and mining and quarrying, 7. The highest aggregate value of assets worth Rs. 1837.7 crores—76.53 per cent of the total assets worth Rs. 2401.50 crores of 288 branches (for which data are available)—is held by 60 branches engaged in commerce, trade and finance. They were followed by 82 branches engaged in agriculture and allied activities which held assets worth Rs. 227.1 crores (9.46 per cent of total) and 41 branches engaged in processing and manufacture which held assets worth Rs. 150.7 crores (6.28 per cent of total). Thus the branches under these three broad groups held 92.26 per cent of total assets of branches operating in India in 1978-79.

As regards pharmaceutical branches, the table shows that 18 such branches were operating in India in 1969-70. But this number declined to 11 in 1973-74 and further to only six in 1978-79. However, their corresponding assets increased from Rs. 10.1 crores to Rs. 16.9 crores and further to Rs. 25 crores in 1978-79, indicating a 150 per cent rise in 10 years. In 1978-79 the pharmaceutical branches had 16.59 per cent share in the total assets of branches engaged in processing and manufacturing business and they accounted for 1.04 per cent share in the total assets of 288 branches for which the data appear in Table 1.8.

Subsidiaries : Distribution by Industry

Breakdown of distribution of subsidiaries by industry appears in Table 1.9. This table shows that barring an increase in the number of subsidiaries engaged in the tea plantation business, the number of subsidiaries under all the remaining seven broad categories of occupations has declined over the ten-year period under study. The data for 1978-79 show that the highest number of subsidiaries, 82, were operating in processing and manufacture. They were followed by 18 subsidiaries engaged in commerce,

TABLE 1.8

Distribution of Branches by Industry in 1969-70, 1973-74 and 1978-79

(Assets in Rs./Crores)

S. No.	Industry	1969-70			1973-74				1978-79			
		No.	Total Net Assets	% of total	No.	Cos. for which assets data are available	Assets	% of total	No.	Cos. for which assets data are available	Assets	% of total
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Agriculture and allied activities of which :	126	217.0	16.87	115	111	223.0	12.46	85	82	227.1	9.46
	(i) Tea plantation	123	214.8	16.70	114	111	223.0	12.46	84	82	227.1	9.46
2.	Mining and quarrying of which :	8	27.5	2.14	7	6	37.1	2.07	7	5	35.0	1.46
	(i) Copper mining	1	20.7	1.61	1	1	27.0	1.51	1	1	27.0	1.12
3.	Processing and manufacture of which :	123	294.3	22.88	82	68	220.4	12.31	47	41	150.7	6.28

(Contd.)

TABLE 1.8 (Contd.)

1	2	3	4	5	6	7	8	9	10	11	12	13
	(i) Cigarettes	1	23.1	1.80	—	—	—	—	—	—	—	—
	(ii) Tobacco manufacturing (other than cigarettes, cigars and bidies)	—	—	—	4	2	25.6	1.43	2	1	29.0	1.21
	(iii) Jute spinning, weaving etc.	6	22.9	1.78	6	3	21.1	1.18	6	6	23.4	0.97
	(iv) Weaving apparel (except footwear) and made up textile goods	2	10.5	0.82	—	—	—	—	—	—	—	—
	(v) Machinery, other than transport and electricals	23	15.3	1.19	22	9	22.5	1.26	13	11	22.3	0.93
	(vi) Medicines and pharmaceutical preparations	18	10.1	0.79	11	9	16.9	0.94	6	6	25.0	1.04
	(vii) Petroleum refineries	7	164.5	12.79	3	3	59.8	3.34	2	2	24.6	1.02
	(viii) Coke ovens (excluding gas works)	4	11.7	0.91	—	—	—	—	—	—	—	—
4.	Construction and utilities	23	63.4	4.93	33	28	46.4	2.59	21	19	102.2	4.26
5.	Commerce, trade and finance of which :	158	632.9	49.21	163	141	1231.7	68.79	68	60	1837.7	76.53
	(i) Wholesale trade in commodities other than food stuffs	58	40.4	3.14	69	57	148.1	8.27	36	32	14.8	0.62
	(ii) Insurance companies	70	27.6	2.15	55	52	33.5	1.87	5	5	3.4	0.14
	(iii) Banking	—	—	—	15	—	—	—	15	—	—	—
6.	Transport, communication and storage	32	—	—	39	9	3.5	0.20	35	7	6.2	0.25
7.	Community and business services	77	47.9	3.72	87	61	23.5	1.31	58	46	32.6	1.36
8.	Personal and other services	14	3.1	0.24	14	10	4.8	0.27	9	7	5.3	0.22
9.	Liaison and representative offices	—	—	—	—	—	—	—	28	21	4.7	0.19
	Total	561	1286.1	100.0	540	434	1790.4	100.0	358	288	2401.5	100.0

Source : As for Table 1.6.

TABLE 1.9

Distribution of Subsidiaries by Industry in 1968-69, 1973-74 and 1978-79

Sr. No.	Industry	1968-69			1973-74			1978-79		
		Number	Total net assets	Per cent	Number	Total net assets	Per cent	Number	Total net assets	Per cent
1.	Agriculture and allied activities									
	of which :	3	28.3	2.51	4	47.6	3.49	13	109.0	6.39
	Tea plantation	3	28.3	2.51	4	47.6	3.49	13	109.0	6.39
2.	Mining and quarrying	5	11.2	0.99	4	10.3	0.76	3	15.9	0.93
3.	Processing and manufacture of which :	165	873.9	77.38	137	1254.9	92.02	82	1545.6	90.56
	(i) Cigarettes	2	51.0	4.52	2	85.5	6.27	—	—	—
	(ii) Footwear	1	17.7	1.57	1	32.5	2.38	—	—	—
	(iii) Motor vehicles and parts	4	38.1	3.37	3	61.5	4.51	3	128.6	7.53
	(iv) Electrical machinery	16	112.4	9.95	14	195.0	14.30	11	285.9	16.74
	(v) Medicines and pharmaceuticals preparations	21	101.0	8.94	17	127.9	9.38	17	205.2	12.02
	(vi) Aluminium ware	4	49.4	4.37	—	—	—	2	103.6	6.07
	(vii) Machinery other than transport and electricals	32	71.2	6.30	27	80.0	5.87	11	67.7	3.97
	(viii) Basic chemicals and fertilisers	1	10.2	0.90	5	93.3	6.84	—	—	—
4.	Construction and utilities	3	16.8	1.49	2	19.5	1.43	1	0.04	Neg.
5.	Commerce, trade and finance	32	191.3	16.94	30	24.4	1.79	18	31.7	1.86
6.	Transport, communication and storage	4	1.7	0.15	4	4.0	0.29	1	0.4	0.02
7.	Community and business services	6	3.8	0.34	5	2.9	0.29	4	2.6	0.15
8.	Personal and other services	5	2.4	0.21	2	0.1	Neg.	3	1.5	0.09
	Total	223	1129.4	100.0	188	1363.7	100.0	125	1706.8	100.0

Source : As for Table 1.6.

trade and finance, 13 subsidiaries engaged in agriculture and allied activities (all of these were in tea plantation), 4 engaged in community and business services, 3 each engaged in mining and quarrying, and personal and other services, 1 each engaged in construction and utilities, and transport, communication and storage. The total assets of all the 125 subsidiaries were valued at Rs. 1706.8 crores in 1978-79. Out of this, Rs. 1545.6 crores, i.e., 90.56 per cent of assets were held by subsidiaries engaged in processing and manufacturing business alone.

As regards pharmaceutical subsidiaries, the table shows that 21 such companies were operating in 1968-69 but this number declined to 17 in 1978-79. Their total assets, however, increased by more than 100 per cent during this period from Rs. 101 crores to Rs. 205.2 crores. The share of assets of 17 pharmaceutical subsidiaries in the total assets of 82 subsidiaries engaged in processing and manufacturing business in 1978-79 works out to be 15.54 per cent and that in the total of 125 subsidiaries, 12.02 per cent.

Before we proceed further, a note of caution about the industrial classification of branches and subsidiaries is called for. The trends based on this classification should be taken as broad indicators of their activities. This caution stems from the fact that the official industrial classification of these companies continues to be the one that was initially assigned to them. In practice, however, most of these companies have branched off into various additional fields. This diversification in their activities has helped them not only to expand into new and profitable ventures but has also helped them to escape any likelihood of attracting anti-monopoly legislation and public resentment.[21]

In the preceding sections we had a global and Indian overview of multinational corporations. The following two sections deal with the motivations and consequences of MNCs' operations abroad. The first section summarises the main arguments in the various theories of foreign direct investment and the second section highlights the positive and negative aspects of MNCs' activities in the host countries.

Motivations Behind Foreign Investment

One of the earliest explanations of foreign investment is found in the cheap capital hypothesis. This hypothesis attributed the

foreign investment operations of firms to the availability of abundant capital in the home country of the investing firms. Implicit in this hypothesis was the assertion that rates of return on investment abroad are higher than those on domestic investment. This hypothesis held sway in the 1950s when American manufacturing firms were investing in Europe where the after-tax rate of returns exceeded that on domestic investment. Second thoughts began to surface when the US firms doubled their capital stake in European manufacturing between 1960 and 1970, although earnings there were no higher than at home. Further doubts were raised about this thesis on two accounts.[22] First, it was realised that the reported rates of profit for any one country could be manipulated because tax and exchange control regime may make it worthwhile for firms to shift profits between affiliates through prices on inter-affiliate transactions. Secondly, profit rate differentials partly correspond to risk differentials in the sense that exchange rate variations, political instability, the threat of expropriation and business fluctuations may work against a firm's decision to invest in the highest profit yielding country.

Of late, portfolio diversification thesis has been advanced as an explanation of foreign investment. The thesis states that firms are not only concerned with the highest mean return on investment, they are equally anxious to produce stable earnings with minimum of variance along these mean returns. This stability and safety, it is argued, would emerge by diversifying the investment portfolios across many countries. A related plausible argument put forward by Kenen[23] is that large firms with operations concentrated in single industry will find greater appeal in investing abroad than conglomerate companies of the same size. This is because whereas, the latter can reduce their risk through involvement in a variety of domestic enterprises, any expansion by the former is more prone to attract attention of anti-trust authorities.

A related portfolio argument is forward by Aliber.[24] Aliber argues that a home country firm capitalises the same income stream of expected earnings at a higher capitalisation rate in the home country than in the host country. Capitalisation rate is the capital value of the asset divided by the income streams. Assuming the income streams to be the same, say Rs. 24 in the USA, the strong currency area, and also Rs. 24 in India, the weak currency area,

but the interest rate to be lower, say, 8 per cent in USA and a higher 10 per cent in India, the capital value of an asset @ 8 per cent interest rate on Rs. 24 income stream would be Rs. 300 (24/.08) in USA and at 10 per cent interest rate, Rs. 240 (24/.1) in India with capitalisation ratio being 12.5 (300/24) in USA and 10 (204/10) in India. In the event of an expected change in the exchange rate, the capitalisation rates on equities and also on debt issues would tend to be higher in the weak currency area. That is to say, interest and profit rates would be higher there.

Now, since the market for equities is biased in the sense that it does not attach a risk premium to the foreign income of the home country firm, it can issue equities in its capital markets at a lower interest rate, take the funds abroad and buy the host country firm. However, if the host country firm intends to raise funds in the capital market of the home country firm it will have to pay higher interest rates for the simple reason that owing to exchange risks the lenders would demand a risk premium for the use of their funds in the weak currency area.

The thrust of Aliber's theory is on the imperfections in the capital market where the host country firms are able to borrow funds at a lower interest rate than the host country firms. But the critics of portfolio diversification approach to foreign investment argue that with a perfect capital market, the capital value of a given project will be determined solely by its own risk and return characteristics—not by the identity of its owner. Thus if the investors are to reduce risk they can diversify their portfolios without turning to multinationals. The explanation to foreign investment according to these critics lies in technological leads and the market control by international firms.

The earliest explanation as to how a technological breakthrough could be a source of trade was shown by Posner.[25] Posner first demonstrated how an innovation in one country could create a comparative advantage which had not previously existed, and how the trade so generated would gradually be eliminated by the recognition and imitation of the innovation elsewhere. Posner, however, did not explain as to why technological innovations occur in some countries and not in others. Vernon's product cycle thesis[26] provided the answer that innovations occur in the home country (normally the USA) owing to the availability of real and human capital and also because of higher average income

compared to consumers in other markets. After a new product developed through innovation and marketed at home has achieved a certain degree of standardisation, the exports to other countries take place followed by investment therein for its production in the local markets. Thus an interesting explanation of foreign activities of firms has come to be recognised in terms of R&D and technological superiorities of MNCs.

R&D and technological superiority thesis is closely related to industrial organisation approaches or the oligopolistic theories of foreign investment. The main exponents of this approach are Hymer, Kindleberger, Caves and Dunning.[27] According to this line of explanation, for direct investment to thrive, there must be some imperfections in the markets for goods and factors, including among the latter, technology or some interference in competition by government or by firms which separate markets, which would lend "market power" to the incoming firm. Furthermore, foreign investment could also occur owing to lower production costs in host countries because of favourable wage rates, raw material prices, or interest rates. . . or because of the opportunity to reduce transportation costs, distribution costs, inventory and serving costs to the markets for which the output are intended.[28]

As a consequence to the oligopolistic behaviour, Knickerbocker[29] found that the optimal strategies followed by firms in an oligopolistic industry is to follow rivals, move for move. His entry concentration index (ECI) showed the extent to which subsidiary start-up dates were bunched in time. He found that ECI was positively related to industry concentration, suggesting oligopolies do react in a way that minimises the possibility of one rival gaining a significant cost or marketing advantage. The ECI was also positively related to the size of market indicating that the reaction is all the more intense when a large market is at stake. Thus according to Knickerbocker's findings, the foreign investment behaviour of MNCs is in tune to their oligopolistic behaviour.

A more general explanation of foreign investment is found in the theories of the growth of the firm. Penrose and Marris[30] were among the earlier proponents who viewed direct foreign investment as a natural outcome of the growth process of firms. Penrose, however, equated both the maximisation of the long-run rate of growth and the long-run profits as the identical objectives of the firms. It was Marris who later argued that the salaried

managers would be more likely to want higher rates of growth than higher profits. Further, in addition to the purely economic advantage conferred by the size, sociological and psychological pressures push managers towards a primary concern for growth. There are broadly two strands of thoughts held within the total view that direct foreign investment is a function of natural growth process of firms—one emphasising the importance of markets and the other stressing the internal real and monetary resources of the firm.

A variant of the theories of the growth of firms is the behavioural-organisational approach popularised by Aharoni.[31] This approach suggests that the very idea of the decision to invest abroad is spread over a period of time and it is the outcome of a sequence of decisions undertaken by various decision makers rather than being once-for-all choice of a single decision maker. The decision process is usually classified into the following sequential steps : the decision to look abroad, the investigation process, the commitment to invest and follow-up reviews and refinements. Whether or not the firm pursues the initial idea of investing abroad depends more on the strength of the initiating force such as an outside proposal from a reliable source, a tariff increase by a foreign government, the drive of a top executive and other such forces and not on the profit or growth prospects. The foreign investment decision, if repeated, is often institutionalised in an international division within the corporation—a significant development in creating both expertise and a vested interest in future foreign investment.

Although a number of theories and hypotheses have been put forward to account for the motivation behind foreign operations of firms, our brief overview in the preceding section shows that no single theory can as yet be deemed to be successful in providing a satisfactory explanation of this phenomenon. A number of questions are left unanswered by most of the theories. For instance, what factors determine a firm's initial foreign investment decision at a given location ? Why do some industries such as chemicals have a long history of foreign direct investment, whereas, others such as drugs have a comparatively shorter history ? Why do some firms in a given industry invest fairly early, others comparatively late, still others not at all ? Why do some industries such as steel have no significant foreign investment,

even though the firms engaged therein are large and developed and control various technical advantages over other firms ? We suggest that one of the factors responsible for this failure to answer these questions stems from the fact that a single theory is usually taken to account for the diversified investment pattern of multinationals. It would perhaps be more useful to look for motivations leading to foreign investment by firms at the industry level. This would, of course, first entail studying a detailed growth pattern, the characteristic features and dimensions of that industry in the world economy.

The Consequences of Foreign Investment

The positive consequences of MNCs in a host country are said to occur in a number of ways. First, it is claimed that the capital funds brought in by MNCs bridge the foreign exchange gap and also contribute to filling up a resource gap between locally available savings and desired investment. Secondly, MNCs are recognised as a most effective instrument for the diffusion of technology in the host countries. Thirdly, by establishing their production facilities in the host countries, MNCs are said to generate not only additional employment but also train personnel both at the technical and the managerial levels. Furthermore, they are also said to substitute imports and also act as an effective instrument of foreign exchange earnings by way of exports. The consumers' benefit results from the availability of better products at a lower cost.

Notwithstanding the aforementioned positive aspects, a number of negative consequences of MNCs' operations in host countries have been put forward by critics. These charges on MNCs can be discussed under two broad headings : (a) economic, and (b) political and social.

As regards economic charges, the claim of MNCs bringing in substantial amount of capital funds is now being questioned. Instead, it is being hypothesised that they rely on local sources for their capital needs.[32] Furthermore, it is argued that the cost of capital brought in by MNCs often tends to be higher than what the host country government would be charged as direct borrower in capital markets. The positive aspect of technology brought in by the affiliates of MNCs is disputed on the ground that technology transfer to host country is often minimised because :

(a) R & D is generally carried out in the home country of the parents ;[33] (b) the training of host country nationals for R & D posts is often not given priority; and (c) technology itself is closely held. Furthermore, the burden of capital and technology servicing reflected in the total outflow of foreign exchange on account of dividends, knowhow fees, royalties etc. tends to be substantial, causing strain on the scarce foreign exchange reserves of the host countries. Thus, for instance, the available data show that the payments on account of knowhow fees and royalties by six countries in a single year amounted to $ 457 million representing 0.68 per cent of their GDP and 7.3 per cent of exports.[34] The total outgo of foreign exchange on these two accounts in the case of 13 countries representing 65 per cent of the total population and 56 per cent of the total GDP of developing countries is estimated at $ 1.5 billion. This amounts to more than half of the direct private investment flow to developing countries. Such payments are estimated as growing at a rate of around 20 per cent per annum and are absorbing increasing proportions of the export earnings of developing countries.[35] It should be noted here that the net outflow of foreign exchange on account of service payments and also on the international trade transactions would be much higher if the transfer pricing practices of MNCs could be accounted for.

The employment potenial of MNCs is questioned on the grounds that since they mostly operate in capital-intensive industries, the techniques and products introduced by them tend to be largely labour-saving. Furthermore, it is argued that these corporations do not necessarily train local personnel in technical and entrepreneurial skills which in fact are more important than executive skills.

Political charges on MNCs centre around the fact that their vast financial power and ready access to the government and business set-ups is often used to influence the decisions pertaining to political and economic issues to their advantage. Socially, the ostentatious living styles of foreign personnel and also those of the locals employed by them cause resentment among the host country people. Local people working with foreign companies are also accused of as unduly influenced by alien values. Styles of management directed towards efficiency but insensitive to local cultural values are termed as arrogant and dehumanising. Further,

by creating wants similar to those in developed societies through advertising, MNCs are said to create a pattern of consumption unfavourable to local surroundings.

It should be noted in this section that although MNCs have been criticised on a number of grounds, in actual practice it is indeed very difficult to evaluate the exact benefits or costs of their operations in the host countries. This difficulty stems from the fact that the gamut of issues involved—sociological, political and economic—are numerous, with many of them being unquantifiable. In such a situation, the question that is raised is : what would be the scenario if the MNCs had not invested in a host country at all ? This question, as is obvious, cannot be answered with any reliable degree of precision. The only effect of MNCs that can be reasonably recorded in figures is their impact on host country's balance of payments. In Chapter 6 we make such an attempt in the case of drug MNCs in India.

Present Study and its Objectives

The present study was undertaken in view of the recent controversies generated over the role (and growth) of drug MNCs in the development of the pharmaceutical industry in India. A review of the literature in this field (see below) showed that these controversies got intensified especially after the publication of the 'Report of the Committee on Drugs and Pharmaceuticals' in 1975 and have not been followed up by any detailed study of the economics of the pharmaceutical industry tracing the role and importance of drug MNCs therein. Furthermore, whereas the drug transnationals have been subjected to severe criticism from all quarters, thus far no serious effort has been made to undertake any in-depth study of their financial operations which in itself could discern some of the central issues involved in the problem. However, in view of the acute shortage and non-availability of data, these shortcomings should not come as a surprise. This work, with a data base covering a number of sources, attempts to fulfil these gaps in the literature. The two-fold objectives of this study are : First, to examine in an international perspective the economics of the pharmaceutical industry in India, tracing the role and the "market power" of drug MNCs therein. And, secondly, to analyse the implications of this "market power" on the financial

performance of drug transnationals operating in the country. The latter encompasses a study of such issues as the profitability, profit appropriation, sources and uses of funds, and the impact of these corporations on India's balance of payments. These issues, *inter alia*, help us in examining an *a priori* debated hypothesis that not only a major portion of funds engaged as 'capital employed' by drug transnationals in India has been raised locally, but over the years of their operations in the country, these companies have also acted as net exporters of funds by way of excess of remittances over earnings in foreign exchange.

We present below a review of the literature followed by the chosen methodology, data sources and the chapter scheme of the thesis which would provide an introduction to our work.

A Review of Literature

A review of work done in the field of pharmaceutical sector in India shows that with the exception of stray articles appearing occasionally in the press, very little work has been done. Various government reports relating to the industry are either too old or contain too little to provide an insight into the working of the industry. Two exceptions, however, are : (i) Report on the fair selling prices of drugs and pharmaceuticals (1968), and the Report of the Committee on Drugs and Pharmaceuticals (1975). The first report was primarily meant to examine the cost structure of 18 specified drugs and to recommend as to what extent the prices of these drugs could be lowered after taking into account such factors as capital outlay including plant and machinery in relation to (i) actual production, and (ii) potential capacity, prices and quantities of raw materials and intermediates, prices at which similar products can be manufactured by small-scale manufacturers, indirect elements such as management expenses, promotional expenses and sampling etc. The Committee was also to recommend the minimum and maximum margins of profits covering all stages from the producer to the ultimate consumer. The data and analysis provided by this Committee later became the basis for evolving certain principles and guidelines to improve and rationalise the various price control measures which were subsequently revised on the recommendations of later committees especially the Hathi Committee Report.

The Hathi Committee Report is divided into seven parts.

The first two parts are attributed to the introduction and progress made and status achieved by the industry so far. The analysis of the working of the public sector drug companies constitutes the third part and the concept of NDA (National Drug Authority) mooted by the Committee is discussed in the fourth part. This authority, as envisaged by the Committee, was to perform, *inter alia*, functions of maintaining and making available to the drug manufactures information regarding the items which can be manufactured, the patent position regarding drugs, the processes and knowhow available from indigenous sources—the overseas countries and companies which are in a position to provide know-how, the supply of raw materials in world markets and the prospects for exports. NDA was also to regulate the prices and R & D in the industry. However, the concept of forming a separate drug authority to regulate the various aspects of the industry was not accepted by the government, neither were the recommendations concerning the nationalisation of the industry, discussed in the fifth part of the report. The committee members themselves were divided over this issue. Availability and future needs of raw materials for bulk drug manufacture, development and flow of technology for the industry, pricing of drugs and pharmaceuticals and quality control of drugs and finally measures for providing essential drugs and common household remedies to the general public in rural areas and abolition of brand names for drugs are discussed in the remaining sections of the report. Although the report discussed very little about the financial aspects of drug MNCs, it nevertheless set the stone of controversy rolling after its publication in April 1975. A number of articles appearing in the press advocated a take-over of the drug industry. Their arguments were mainly based (though often without factual data base) on the high rate of profits earned by the industry, meagre amount of R & D expenditures, anomalies in drug prices, chaos created by thousands of brand names and huge remittances on various accounts by foreign drug companies. But despite these criticisms, government opted for stricter measures to control the activities of drug MNCs rather than outright nationalisation of them. FERA was enforced rigorously and a tighter drug price control (DPCO) was implemented. But while most of the drug units have been allowed to retain majority foreign ownership, a good deal of controversy has cropped up over the DPCO 1979. The industry

might get relaxations in the fixation of drug prices also. This is not to denounce the government measures but to highlight the need for a professional approach to tackle the various issues related to the industry.

There are a few United Nations reports on MNCs in general and on the pharmaceutical industry in particular. Of special relevance to India is "Case studies in the transfer of technology : The pharmaceutical industry in India". As the name implies, it deals primarily with the problem of technology transfer in the case of the pharmaceutical industry in India. The first part, however, is devoted to the structure of the Indian pharmaceutical industry. The remaining three parts deal respectively with the technological dependence in the Indian pharmaceutical industry, costs and consequences of this technological dependence and the policy framework for the transfer of technology. The report highlighted a strong imbalance between the pattern of drug production and the prevailing diseases, relatively low expenditure for research and development and a great gap between the institutions of R & D and the local and foreign producers.

There are a few publications by OPPI (Organisation of Pharmaceutical Producers of India). Almost all the foreign drug companies are members of this organisation. Among its publications (some of which are reproductions of various articles appearing in the press) there is one entitled "A growth plan for the Indian pharmaceutical industry". This publication is supposed to be an alternative to the Hathi Committee Report. It discusses various issues related to the industry : Pricing, distribution of drugs in rural areas, R & D, foreign exchange inflow and outflow, sales of drugs under brand names etc. The publication follows the Report of the Hathi Committee closely, differing on issues such as that of abolition of brand names and the formation of a National Drug Authority, which, as this report claims, will only add to the bureaucratic set-up.

Besides the aforementioned literature on the subject, Reserve Bank of India periodically publishes the Financial Statistics of Joint Stock Companies in India. This is the only source of published financial data on the drug industry. But unfortunately the data appear in the consolidated form for both the Indian and the foreign firms and hence it cannot be used for examining the performance of individual or different groups of companies.

Methodology

Definitions and the Sample

As stated earlier, we adopt the UN definition of MNCs as enterprises which control assets—factories, mines, sales offices and the like in two or more countries. A minority-owned MNC is defined as the one holding equity ownership up to 49 per cent and a majority-owned MNC as the one holding equity ownership of 51 per cent and above. Although the terms transnational and multinational have been used interchangeably in preference to the simpler international, the term foreign company has been used at places as synonymous to transnational or multinational.

The term pharmaceutical industry is defined to include : (a) firms producing synthetic bulk drugs, (b) firms producing bulk drugs by the process of fermentation, and (c) firms producing formulations.[36] A pharmaceutical company has been defined as one which, irrespective of its diversified activities, generates 50 per cent or more of its sales from drugs and pharmaceuticals.

The Committee on drugs and pharmaceutical industry had identified 66 drug companies with various degrees of foreign equity participation. However, a closer examination revealed that out of these 66 companies, 18 have been listed as basically non-drug companies (Appendix A); of the remaining, 6 were operating as branches (Appendix B); 4 as wholly-owned subsidiaries (Appendix C); 5 were private limited companies (Appendix D); and the whereabouts of 2 companies could not be traced (Appendix E). Branches and wholly-owned subsidiaries have no local equity participation and the share capital contributions of private limited companies are restricted to fifty shareholders only. Moreover, it is very difficult to obtain the statement and/or annual accounts for these sets of companies. Therefore, of the remaining 31 companies,[37] 27 public limited companies, each with a minimum paid-up capital (PUC) of Rs. 5.00 lakhs were selected, keeping in view the availability of a complete set of final accounts for the eight-year time period, *viz.*, 1970-71 to 1977-78, chosen for the study. This sample accounted for around 25 per cent of total capital investment and 48 per cent of total production of drugs in the industry in 1977-78.

In order to study if with regard to their financial performance there exist any inter-group differences, the 27 companies selected

by us were divided into three groups : Small with PUC up to Rs. 75 lakhs; Medium with PUC between Rs. 75 lakhs and Rs. 150 lakhs, and large with PUC of Rs. 150 lakhs and above. The number of companies falling in these groups are respectively 11, 8 and 8 (Appendix F). According to our definition stated earlier, 11 companies in the small group are minority owned with average foreign equity participation of 44 per cent. The companies in the latter two groups are majority owned with the second group holding on average 54 per cent of foreign equity and the third group holding on average 68 per cent of foreign equity. The average foreign equity holding for all the three groups combined works out to be 55 per cent.

PUC was chosen as a basis of classification against other alternatives such as net sales or net assets, after it was found that the grouping on the basis of any of these financial indicators is almost the same. PUC had the marginal advantage of comparative consistency over the eight-year period, 1970-71 to 1977-78. It was further noticed that whether classified on the basis of their respective PUC as on 1977-78 or on the basis of average of eight years of PUC, around 70 per cent of the companies fall in the same groups. Hence it was decided to adopt the average basis.

Data/Information Sources

Factual data pose a most formidable problem in undertaking research on any aspect of MNCs in India. Pharmaceutical industry which is under the effective domination of MNCs was no exception to the rule. Initially some scattered data/information on the subject could be collected from Government of India reports and some general publications on the subject, especially by the United Nations agencies. Later this problem of severe 'data barriers' could be partly overcome by referring to a number of diverse sources which included Department of Company Affairs Library, New Delhi, Bombay Stock Exchange Library, Office of the Registrar of Companies, Bombay, and the Organisation of Pharmaceutical Producers of India. Further, a detailed list of papers relating to MNCs and the pharmaceutical industry, laid on the tables of Lok Sabha and Rajya Sabha, was prepared and referred to in the Parliament library after scanning through the debates over the last three decades of both the Houses. The libraries of the Ministry of Petroleum, Chemicals and Fertilisers, Ministry of Finance and Ministry of Labour were also referred to. Finally, wherever possible, discussions were held with the senior officials of various private and public offices.

Chapter Scheme

Besides this first introductory chapter, the following six chapters have been planned. Each individual chapter has its summary at the end. The chapter scheme giving the salient features and the contents thereof is presented below.

Chapter 2 deals with the economics of the pharmaceutical industry in general. The peculiar characteristics of this industry enable us to discuss the following special features on the demand and the supply side. On the demand side, keeping in view the typical nature of the drugs, we examine the prices, demand and the standing of the consumer in the market in relation to the pharmaceutical products. On the supply side, we discuss the research and development factor, the issue of patents, production stages and the quality control measures involved in the manufacture of drugs, concentration in production and the implications of this concentration.

Chapter 3 presents the pharmaceutical industry in its historical perspective and examines with the help of factual data, the structure of the industry, its ownership pattern, production, capacity utilisation, the share of foreign and Indian sectors in the total market sales of drugs, extent of drug consumption in India, employment, capital investment, imports, exports, and the R and D factor. The role of drug MNCs in all these developmental and policy issues is highlighted.

Chapter 4 examines in detail the issue of drug prices and Drug Price Control Orders (DPCO) in India under the following four broad heads : Importance of DPCO, nature and scope of DPCO in India, economic consequences of DPCO, drug prices and *modus operandi* of drug price controls. The issue of profitability of drug companies is also discussed in detail in this chapter under 'the economic consequences of DPCO'. Two pertinent issues are then examined in this respect : first, whether the profitability of the drug industry is really high compared to other industries, as is often asserted, and, secondly, whether the profitability of drug companies has declined in the past owing to stringent DPCO, as has been claimed by drug companies.

Chapter 5 is broadly divided into three sections. In the first section we discuss a general structure of the sources of funds for transnational corporations. In the second section, this general structure of the sources of funds is examined against the empirical data on the sources of funds for drug MNCs in India to examine if there exist any behavioural differences between the two structures. In the process we also analyse the capital structure, the capital investment pattern and profit appropriation policies of drug MNCs in India. The third section discusses the pattern of the uses of funds by these corporations.

Chapter 6 deals with the impact of drug MNCs on India's balance of payments. The first section highlights the central problems associated with undertaking such an exercise. The second section traces the share of drug transnationals in the total remittances of MNCs from the country on various accounts (dividends, technical knowhow fees, royalties etc.) during the 24-year period, 1956-80. We then weigh this total outflow of funds from the country by drug MNCs against their inflow earnings to see if they have been net earners or spenders of foreign exchange. We also discuss and make some rough estimates of outflow of funds on account of transfer pricing practices of drug MNCs operating in India.

Chapter 7 summarises the major factual observations and conclusions of the study.

Notes and References

1. For a comprehensive survey of work in this field see United Nations, *Survey of Research on TNCs*, 1977.
2. Raymond Vernon, *Storm over the Multinationals*, Macmillan, 1977, p. v.
3. For a survey of definitions, see *U.N. Multinational Corporations (MNCs)* in World Development, 1973, Annex II, pp. 118-121 ; and Yair Aharoni, "On the definition of a MNC" in A. Kapoor and Philip D. Grub (eds.) *The Multinational Enterprise in Transition*, New Jersey, Darwin Press, 1973, pp. 3-20.
4. David Lilienthal, *The MNC, Development and Resource Corporation*, N.Y., 1960, p. 1.
5. *Ibid.*
6. Yair Aharoni, op. cit.
7. Howard V. Perlmutter, "The tortuous evolution of the MNC" in A. Kapoor and Philip D. Grub, 1973, op. cit., pp. 53-66.
8. United Nations, 1973, op. cit., p. 5.
9. *Ibid.*

10. Neil Hood and Stephen Young, *The Economics of Multinational Enterprise*, London, Longman, 1979 (Table 1.5, p. 22).
11. UN, 1973, op. cit., p. 12.
12. *Ibid.*, Annex. III, Table 1, p. 127.
13. Raymond Vernon, *Sovereignty at Bay : The Multinational Spread of US Enterprises*, Basic Books, N.Y., 1971, p. 12.
14. United Nations, 1973, op. cit., Table 16, p. 152.
    Note : All the percentages appearing in brackets may not add up to 100 because the source reports that in a number of cases the form of ownership is unknown.
15. UN, *Transnational Corporations in World Development : A Re-examination*, 1978, p. 69.
16. UN, 1973, op. cit., p. 22.
17. Goverment of India, Ministry of Law, The Companies Act, 1956, Section 591, p. 274.
18. *Ibid.*, Section 4, p. 8.
19. S.K. Goyal, "The impact of Foreign Subsidiaries on India's Balance of Payments," Indian Institute of Public Administration, New Delhi, 1979, p. 11.
20. It should, however, be noted that along with the dropouts some new firms must also have joined the business in the last ten-year period, contributing their share in the total assets.
21. S.K. Goyal, op. cit., p. 19.
22. G.C. Hufbauer, "The MNC and Direct Investment" in Peter B. Kenen (Ed.) *International Trade and Finance*, Cambridge University Press, 1975, p. 261.
23. In a private communication to Hufbauer. See G.C. Hufbauer, op. cit., p. 265.
24. Robert Z. Aliber, "A theory of direct foreign investment" in Charles Kindleberger (Ed.), *The International Corporation*, Camb, Harvard Uni. Press, 1970, pp, 17-34.
25. M.V. Posner, "International Trade and Technical Change" in *Oxford Economic Papers*, XXXI, 1961, pp. 323-41.
26. Raymond Vernon, "International investment and international trade in the product cycle" in *Quarterly Journal of Economics*, Vol. LXXX, 1966, pp. 190-207.
27. See especially :
    S.H. Hymer, *The International Operations of National Firms : A Study of Direct Foreign Investment*, M.I.T. Press, 1976.
    C.P. Kindleberger, *American Business Abroad*, (six lectures on direct investment), New Haven and London, Yale U. Press, 1969, Chs. 1 and 6.
    Richard E. Caves, "International Corporations : The Industrial Economics of Foreign Investment," in *Economica*, 38, February 1971, pp. 1-27.
    John H. Dunning, "The Determinants of International Production," *Oxford Economic Papers*, 25, 1973, pp. 289-336.
28. C.P. Kindleberger, 1969, op. cit., p. 13.

29. F.T. Knickerbocker, *Oligopolistic Reactions and the Multinational Enterprise*, Boston, Harvard Uni. Press, 1970.
30. Edith Penrose, "Foreign Investment and the Growth of the Firm," in *The Growth of Firms, Middle East Oil and Other Essays*, Frank Cass and Co. Ltd., London, 1971, pp. 64-81.

    Edith Penrose, *The Theory of the Growth of the Firm*, Oxford, Basil Blackwell, 1980.

    Robin L. Marris, *The Economic Theory of Managerial Capitalism*, London, Macmillan, 1964.

    Robin L. Marris, Review of 'The Theory of the Growth of the Firm', *Economic Journal*, LXXI, pp. 144-148.
31. Yair Aharoni, *The Foreign Investment Decision Process*, Harvard Uni., 1966,
32. Our analysis of sources of funds data (in Chapter 5) for drug MNCs in India also supports this view.
33. In 1965, for instance, US MNCs spent in total $ 8124 million on R & D out of which only $ 526 million, i.e., some 6 per cent was spent abroad—See UN, 1973, op. cit., Annex. III, Table 39, p. 189.
34. Argentina (1969), Brazil (68), Columbia (66), Mexico (68), Nigeria (65), Sri Lanka (70), UN (1973), op. cit., Annex. III, Table 40, p. 190.
35. UNCTAD. *Transfer of Technology*, 1971, p. 50.
36. B. Chandrakanta Rao. "Preliminary Design Aspects of a Pharmaceutical Industry", *Indian Drugs and Pharmaceutical Industry*, Vol. XII, No. 3, May-June, 1977.

    Firms producing synthetic drugs are essentially chemical process firms. The design work of such firms requires a knowledge of unit operations as well as chemical process principles. The fermentation firms require a sound background of industrial microbiology including aseptic and sterile techniques in addition to the knowledge of unit operations and mass transfer. The firms producing formulations need a background of unit operations, ascetic and sterile techniques, heat transfer and fluid flow. In addition to it, a thorough knowledge of formulations is required for the design work.
37. [66−(18+6+4+5+2)]. The remaining 4 companies are listed in Appendix F.

APPENDIX

(A) Department of Company Affairs, Directory of Joint Stock Companies in India (1975). Out of these 18 companies, 6 were private limited and 12 public limited companies.

Private Limited Companies

(1) Associated Capsules Pvt. Ltd.
(2) Capsulation Services Pvt. Ltd.
(3) Chowgule Co. Pvt. Ltd
(4) E. Merck (I) Pvt. Ltd.
(5) Martin & Harris (P) Ltd.
(6) Cibatul Ltd.

Public Limited Companies

(1) Alkali & Chemical Corpn. of India Ltd.
(2) Bayer (I) Ltd.
(3) Ciba-Geigy of I. Ltd.
(4) Curewell (I) Ltd.
(5) Dental Products of India
(6) Ethnor Ltd.
(7) Johnson & Johnson Ltd.
(8) Rallis I. Ltd.
(9) Reckitt & Colman of In. Ltd.
(10) Smith & Nephew Ltd.
(11) Whiffens (I) Ltd.
(12) M.I.T. Labs.

(B) (1) Cooper Labs.
(2) C.W. Carnirick
(3) John Wyeth Bros. Pvt. Ltd.
(4) May & Baker (I) Ltd.
(5) Nicholas of India Ltd.
(6) Smith Kline and French (I) Ltd.

(C) (1) Abbot Labs. (I) Ltd.
(2) Beecham (I) Pvt. Ltd. (basically a non-drug firm)
(3) Burroughs Wellcome and Co. (I) Pvt. Ltd.
(4). C.E. Fulford

(D) (1) Gelikeps (P) Ltd.
(2) Griffon Labs. Pvt. Ltd.
(3) Leukoplast (I) Pvt. Ltd.
(4) Thomas Pharmaceuticals Pvt. Ltd.
(5) Uni-Ucb (P) Ltd. Out of these five, only 2 had share capital above Rs. 5 lakhs (Rs. 7.50 lakhs).

(E) (1) Ward Blenkinsop Ltd.
(2) Christian Hoden Ltd.

(F) The remaining 4 companies are :
(1) Anglo French Drug Company
(2) Suhrid Geigy Ltd.
(3) Uni Sankyo Ltd.
(4) U.S. Vitamins & Pharmaceuticals Corpn. (I) Ltd.

The three groups of companies are as follows :

Group I : PUC up to Rs. 75 lakhs

(1) Biological Evans.
(2) Boehringer Knoll Ltd.
(3) Carter Wallace Ltd.
(4) Duphar Interfran Ltd.
(5) India Schering Ltd.
(6) J.L. Morrison Sons & Johns (I) Ltd.
(7) McGraw Ravindra Labs. (I) Ltd.
(8) Raptakas Brett & Co. Ltd.
(9) Roussel Pharmaceuticals (I) Ltd.
(10) Searle (I) Ltd.
(11) Wander Ltd.

Group II : PUC between Rs. 75 and 150 lakhs

(12) The Boots Company (I) Ltd.
(13) Cynamid India Ltd.
(14) Geoffrey Manners & Co. Ltd.

(15) German Remedies Ltd.
(16) Organon (I) Ltd.
(17) Richardson Hindustan Ltd.
(18) Synbiotics
(19) Wyeth Labs. Ltd.

Group III : PUC of Rs. 150 lakhs and above

(20) Glaxo Labs. (I) Ltd.
(21) Hoechst Pharmaceuticals Ltd.
(22) Merck Sharp & Dohme of India Ltd.
(23) Parke Davis (I) Ltd.
(24) Pfizer Ltd.
(25) Roche Products Ltd.
(26) Sandoz India Ltd.
(27) Warner Hindustan Ltd.

2

The Economics of the Pharmaceutical Industry

THIS chapter deals with the economics of the pharmaceutical industry in general. The characteristics peculiar to this industry enable us to discuss the following special features on the demand and supply sides. On the demand side, keeping in view the typical nature of the drugs, we examine the issue of prices, demand and the standing of the consumer in the market in relation to the pharmaceutical products. On the supply side we discuss the issues of research and development, patents, production stages and the quality control measures involved in the manufacture of drugs, concentration in production and its implications thereof.

Prices and the Demand for Drugs

Prices play an important role in the regulation of the entire range of economic activities—production, distribution and consumption. In a free enterprise economy, prices act as a signal for the allocation of consumption expenditure on the demand side and the allocation of factor inputs on the supply side. When they are determined through the interaction of demand and supply, they also determine the relative distribution of income. The prices as determined above, would, however, be subject to change owing to changes in policy parameters such as monetary and fiscal policies or wage-income policies. They would be further subject to disturbances originating in exogenous variables like income, tastes, availability of complements and substitutes. When we look at the drug industry in this way we find that the above assertions do not perfectly fit in with the facts. In the case of drugs, the intrinsic life-saving therapeutic value plays an important role on the demand

side. And, this life-saving therapeutic value yielding an infinite utility to the consumer renders the demand for drugs completely price inelastic. There is another peculiarity complementing the above factor of price inelasticity. In the case of all other consumer goods both the functions—the choice of a product and the payment of its price—are performed by the consumer. Here the demand for a product is normally a function of relative prices and his income. But in the case of drugs, 'the man who chooses does not pay and the man who pays does not choose.' This divorce between the decision maker and the consumer *per se* results from a very strong intervening factor between the two. This intervening factor is the medical practitioner who diagnoses the patient and writes the prescription for him. The consumer then buys the drug without exercising any of his options regarding the type of drug to be bought by him. His role is reduced to simply that of a price taker in the market. It also follows that the tastes, substitutes and complements cease to play any role in the purchasing schedule of the consumer. These peculiarities lead to strong imperfections in the market from the consumer's side and render the demand for drugs price inelastic. In the long run, however, because of competition among rival firms, technical break-throughs and the ascendancy of public sector undertakings, the cheaper, better and alternative drugs may become available. Here the existence of substitutes and complements may influence the physician's choice in his prescriptions. At this level, different firms compete with each other to draw clientele to themselves by canvassing support for their drugs. One of the factors which would help successful canvassing will be prices and the therapeutic value of drugs. When the medical practitioners are made aware and are convinced of efficacy, quality and genuineness of the cheaper drugs, they would begin to prescribe these drugs and the demand may turn out to be price elastic.

It is sometimes argued that the demand for drugs is not only price inelastic but also income inelastic. In actual practice, however, it may or may not be income inelastic. The extent to which income and better health are related, the demand for drugs may be inversely related to the rise in real income. The demand for drugs may as well be income elastic because, as income rises, people become more health conscious. As a result the frequency of availing of medical aid may sharply increase. On the whole, however,

out of four stratas in a society—the rich, the upper middle, the lower middle and the poor—the demand for drugs might be income inelastic for the first two groups and elastic for the latter two. The whole question of income elasticity of drugs is complicated by the reimbursement of medical expenses by employers. This practice is widely prevalent in both the public and private sector undertakings. To the extent the arrangement of reimbursement of whole or part of the medical expenses exists, the consumer's (i.e., the patient's) 'actual' expenditure on medical aid remains unaffected by changes in his real income and/or fluctuations in the drug prices. Similar is the case with public health centres which impart free or subsidised health facilities. This is also true of many charitable hospitals in the government sector as well as the organised corporate sector.

Given the aforementioned peculiarities resulting from the typical nature of drugs, the factors affecting the aggregate demand for drugs require some elaboration. We now discuss these factors.

The demand for drugs in a society is governed by such factors as the disease incidence and its trends, population characteristics, and social and physical environment. Disease incidence and trends relate to mortality and morbidity in a society. Birth and infant mortality rates, diseases pertaining to old age and sicknesses occurring in other age-groups greatly affect the demand for drugs. These factors in turn depend upon such demographic factors as the population size, its growth rate, age and sex distribution, access to public health centres (PHCs), degree and trends of urbanisation, and levels of income and education.

Owing to a number of factors, the demand pattern of drugs in a developed and in an underdeveloped country would be different. Thus, for instance because of the differences in value systems, life in an affluent society, may be marred by sicknesses and complications arising out of a rise in the incidence of abortions, venereal diseases, drug addiction and increased violence. As a result the common ailments in such a society would be more in the nature of cardiovascular complications, arthritis, respiratory problems and cancer. Excessive use of drugs also causes health hazards in such a society. On the other hand, a majority of diseases in all age-groups in a poor country would be the direct outcome of a lack of proper and clean water supply, poor sanitation, low level of

education, inaccessibility to public health centres—but, above all, because of poverty and malnutrition. The demand pattern of drugs in such a country would be more in the nature of anti-infective drugs like broad and medium spectrum antibiotics, general anti-bacterial antiseptics, corticoroids with anti-infective, vitamins and hematinics. Natural calamities which are more frequent phenomena in LDCs also add their share to the demand for drugs as in the case of famines and epidemics.

Public health centres all over the world especially those in developed countries contribute largely to the demand for drugs. Developed countries spend a large percentage of their GNP on the health care of their people, a good percentage of which is accounted for by the drugs. Thus, the total health care expenditure as percentage of GNP stands at 8.7 per cent for West Germany (1973), 7.5 per cent for Sweden and the USA (1973), 7.7 per cent for France (1972), 6.5 per cent for Italy (1974), and 5.1 per cent for Switzerland (1973). The corresponding percentages of expenditure on ethical drugs to total health care expenditure for these countries are 18.2 per cent for West Germany, 9.9 per cent for Sweden, 9.3 per cent for USA, 13 per cent for France, 13.1 per cent for Italy and 17.7 per cent for Switzerland.[1] In addition, private expenditure on health care may be substantial in advanced countries, though enough data are not available to corroborate this view. Compared to developed countries, the expenditure on public health care in LDCs is relatively smaller. India for instance spends less than two per cent of its planned expenditure on the health care of its people.

Features on the Supply Side

Research and Development

The pharmaceutical industry ranks high among the research intensive industries in the world. The research in this industry is characterised by lengthy and complicated processes besides being highly risky and inordinately expensive. There is a general consensus in the industry circles that on an average it takes a study of 5000 new compounds before one is found suitable for marketing. And it usually takes 7-11 years before a new drug reaches the marketing phase. Syntax's experience with Naproxen, a non-hormal anti-inflammatory agent, is typical of drug research. The drug was

first researched in May 1965 and the active chemical synthesized in February 1967. By January 1968 Naproxen was recognised as a potentially useful drug and a full development programme was initiated. By July 1969, the drug was found to be safe and clinical studies in patients were begun. The product was first marketed in Mexico in early 1973. From discovery to marketing it took eight years and it was only by the end of 1976 that the product was available in the majority of world markets.

The costs involved in the various processes of drug innovation run into enormous amounts. Total world-wide expenditure on R & D in the pharmaceutical industry for the year 1973 is estimated at US $ 1,200-$ 2,000 million, originating mainly in the USA ($ 752 million), Switzerland ($ 338 million), FRG ($ 308 million), France, UK, Japan, Netherlands, Sweden and Italy.[2] About 50,000 scientists are currently engaged in the R & D departments of drug companies the world over.

At company level, around 15 per cent of total cost of a drug is made up of R and D expenditure (Table 2.14). Data relating to R & D expenditure as per cent of pre-tax profits of 20 US firms appear in Table 2.1. The table shows that R & D expenditure as percentage of pre-tax profits ranges anywhere from 34.1 per cent in the case of Schering Plough to as high as 159.3 per cent for Miles Labs. The average R & D expenditure as per cent of pre-tax profits for these firms works out to be arround 66 per cent. These high spendings on R & D only signify the firms' concern for survival, for their future earnings and growth depends heavily on the success of their research projects.[3] A remarkable correlation between the sales and innovational concentration of four of the largest US firms was found by Grabowski and Vernon.[4] The results are summed up in Table 2.2.

This table shows that, barring the period 1967-71, the share of the four largest firms in innovational output when compared with their share in the total drug sales is only slightly less for the period 1957-61 and slightly more for the period 1962-66. The reason for the share of innovational output being higher—48.7 per cent against 26.1 per cent share of ethical drug sales for the period 1967-71—could be that the concentration in innovational output leads to a hold in the market share of sales only after a time lag of 5 to 10 years. It should also be noted here that successful R & D programmes not only help firms in maintaining their share

TABLE 2.1

R & D Expenditure as Per Cent of Pre-tax Profits of 18 US Firms in 1975

Sr. No.	*Company*	*R & D expenditure as percentage of pre-tax profit*
1.	Abbot	71.6
2.	Baxter	60.4
3.	Bristol Myer	44.5
4.	Johnson & Johnson	53.2
5.	Eli Lily	57.5
6.	Merck & Co.	54.4
7.	Morton Morunich	78.2
8.	Miles Labs	159.3
9.	Pfizer	53.5
10.	Richardson Merrell	69.0
11.	Robins	40.1
12.	Schering Plough	34.1
13.	Searle	69.8
14.	Smith Kline	82.3
15.	Squibb	49.8
16.	Syntax	44.9
17.	Upjohn	117.5
18.	Warner Lambert	45.2

Source: Adopted in abridged form from Barrie G. James, *The Future of Multinational Pharmaceutical Industry Upto 1990*, Table 4.2, p. 66.

TABLE 2.2

Percentage of Innovational Output and Total Ethical Sales Accounted for by Four Largest US Drug Firms

Period	*Share of innovational output*	*Share of total ethical drug sales*
1957-1961	24.0	26.5
1962-1966	25.0	24.0
1967-1971	48.7	61.1

in the total drug sales, but in many cases an improvement in the efficacy of an existing drug and/or a major break-through in the invention of a new drug hitherto unavailable also creates a large demand for it. And this very often helps the company marketing the new drug to monopolise a large share of the market for that drug. A number of examples can be cited. Roche's valium and librium when marketed captured respectively 41 per cent and 14 per cent of the total market sales of oral ataractics. Merck's marketing of Indocin enabled it to capture 42 per cent of anti-arthritis market. Parke Davis and Schering met with a similar success when they marketed Benadryl and Chlortrimetron which captured for them respectively 24 per cent and 21 per cent of anti-histamines market. Similarly Lilly's All Darven hold 30.8 per cent share of analgesics market, Merck's Elavil 34 per cent in the case of psychostimulants and Upjohn's Orinase 31 per cent in the total sales of oral hypoglycenics.[5]

Given the time and costs involved in the invention of new drugs, it is obvious that only the large and financially sound drug firms afford to undertake the R & D programmes and market the resulting new drugs from time to time. Table 2.3 lists 22 new medicines marketed during 1970-75. It can be seen that the credit for marketing almost all these drugs goes to well-known transnational drug companies. Although no supporting data are available, the efforts of smaller companies are said to be centred around making duplicate drugs with slight variations thereupon.

It should, however, be mentioned that the elaborate R & D programmes undertaken by large firms in no way guarantee the success, the chances of which are in fact very low. Risk is inherent in the research for new drugs. The decline in earnings from older drugs and a failure to replace their earnings with a flow of new products has been attributed to the erosion of earnings of Parke Davis and Smith Kline in the USA in the late 60's. The financial problems of Parke Davis primarily due to lack of new products is most probably the reason for its merger with Warner Lambert in 1970. Fisons in the UK appears to be reaching a similar stage. Over 80 per cent of the company's UK ethical sales are derived from one product—Cromolyn Sodium, launched in 1968 and the sales are levelling off in the UK with only exports growing.[6]

TABLE 2.3
New Drugs Introduced During 1970-75

Sr. No.	*Generic name*	*Trade name*	*Company*
1.	Adriamycin	Adriblastina	Farmitalia
2.	Amoxicilline	Amoxyl	Beecham
3.	Beclometasone	Recotide	Glaxo
4.	Benzbromarone	Uricovac	Labaz
5.	Cefalenine	Keflex	Lilly
		Ceporex	Glaxo
		Larixin	Toyawa
		Syncl	Toyo Jozo
6.	Cefazoline	Cefamejin	Fujisawa
7.	Clonidine	Catapresan	Boehringer I
8.	Clotrimazole	Canesten	Bayer
9.	Flurajepam	Dalmane	Roche
10.	Levadopa+benserazide	Madopar	Roche
11.	Levadopa+carbidopa	Sinemet	MSD
12.	Lorazepam	Temesta	Wyeth
13.	Miconazole	Daktarin	Janseen
14.	Minocycline	Minocin	Lederle
15.	Naproxen	Naprosyn	Syntex
16.	Perhexiline	Pexid	Merrel
17.	Pindolol	Visicen	Sandoz
18.	Piracetam	Nootropil	UCB
19.	Prazepan	Demetrin	Warner-Lambert
20.	1-(2-Tetrahydrofuryl) -5-Fluorouracil	Futraful	Taiho
21.	Tinidazole	Fasigyn	Pfizer
22.	Vincamine	Pervincamine	Dausl

Source: *UN Market Trends for Chemical Products 1970-75 and Prospects for 1980*, 1978, Vol. I, p. 212.

Two different explanations are put forward to account for the declining rate of new product introductions. According to the first explanation, the increased stringency of the regulatory

controls has raised the costs and riskiness of new drug innovation, as a result of which drug manufacturers have been unable to maintain the pace of innovations that prevailed in the 1950s. According to the second explanation, there has been a depletion of research opportunities caused by the rapid rate of innovations which peaked in the 1950s. The result is a "knowledge plateau"; dramatic progress in the introduction of new and efficient drugs is expected to require new research break-throughs at a fundamental level.[7]

The fact that R & D of new drugs is of crucial importance for pharmaceutical firms can hardly be disputed. It is only the success of R & D projects which help them to acquire patents for new drugs which in turn ensure a steady flow of returns for a number of years to come. It is also pertinent to note that a well maintained R & D department a is prerequisite even if the firms are to market, in the guise of a new drug, a variation of their own or other firms' drugs. The maintenance of a R & D department assumes further importance in the case of firms marketing a narrow range of products. Thus, for instance, if firm A is deriving a large portion of its revenues from the sale of say common cold drugs and if firm B achieves a break-through in developing an effective anti-cold drug, it would largely wipe out the sales revenues from common cold drugs of firm A.[8] It should be noted here that in the process, firm B would also lose its market share, if any, of common cold drugs. In this sense R & D of new drugs cuts both ways. It could result in a loss of revenues from older drugs and at the same time would fetch fresh revenues from new drugs. This fear of loss of market for established drugs could be the reason behind many firms not undertaking research at the basic level. Further, even if a break-through in the development of a new drug is achieved and patent acquired, the production for the same may be delayed until a later date when the investment in the existing drug production (which the new drug is going to replace) is recovered.

Whereas there is no gainsaying the fact that the maintenance of a R & D department is of paramount importance for pharmaceutical firms, it is obvious, as mentioned earlier, that only the large financially viable firms can afford to maintain them. This almost compulsive need for maintaining the R & D department involving tremendous costs and skilful planning is recognised as a

potential barrier to entry by new firms. Closely associated with the R & D factor is the issue of patents resulting out of R & D.

Patents

Patent right is an exclusive authority granted by a government to the inventor of a new machine or process. The inventor in this case reserves the privilege for a number of years, specified by the government, to make, sell and use his invention. He is also authorised for the disclosure of his invention. The possession of patent rights, thus, gives the owner a certain degree of monopoly power.

Patent rights are of vital importance in the case of pharmaceutical products and may occur in the following forms: (a) Patents on the composition of matter; (b) Process patents; (c) Product patents and, in some countries as in France (d) Application of usage patents.[9] All the leading drug firms have their patents registered in one of these forms either in their home country or in the host country where they operate. The period for which patent rights are allowed differ from country to country. In the USA, for instance, this period is 17 years whereas, it is only seven years in India. During this period the firms are expected to recover their R & D costs incurred on the discovery of the drug for which the patent has been procured. It is alleged that the drug firms often recover their R & D costs incurred on the patented drugs in a much shorter period than the one allowed for the exclusive right on the drugs. The counter argument put forward by pharmaceutical companies is that they use the earnings from the successful patented drugs to subsidise their failures. One implication of larger periods of patents is that it gives sufficient time to the company to establish the drug in the market, which is usually sold under a brand name. The company holding this particular brand name is authorised to retain this name after the expiry of its patent. Smaller firms in the first place have much fewer products to patent. And, moreover, the loyalty to an established brand name usually remains with the medical practitioners long after the patent on any particular drug has expired. All these are seen as deterring factors to entry by the new entrants.

Production Stages and the Quality Control Measures therein

Production of drugs can be categorised into pharmaceutical

chemicals or bulk drugs and pharmaceutical preparations of formulations. Pharmaceutical chemicals are the active ingredients of formulations. Advances in organic chemistry have reduced to a large extent an almost total dependency on plants, animals and minerals for raw materials. The pharmaceutical industry today uses, in addition to the natural materials, synthesized or semi-synthesized chemicals from naturally occurring products as well as completely synthesized products as a basis for producing active ingredients. The production of these ingredients requires the services of scientists trained in organic synthesis and chemical engineering. And since increasing economies of scale exist in their production, the technical know-how for producing pharmaceutical chemicals must be accompanied by the ability to produce them economically. The production of formulations involves the physical production of a drug in its marketed form such as ingredient compounding and dispersion, granulation and drying, together with formulation in the final form—tablets, capsules, injectables, suppositories, liquids, ointments and creams. As is the case with pharmaceutical chemicals, the production of formulations is also an equally skill-intensive process. At the same time, the quality control measures involved therein demand an additional degree of skill and sophisticated equipments. Most countries insist heavily on quality control measures because of the simple fact that drugs possess life-saving therapeutic values and any non-compliance with quality standard would lead to severe health hazards. The requirement of maintaining quality control measures applies to small as well as big firms. But bigger firms by virtue of their large sales can better afford to match the expenditure on quality control measures, than the small-sized firms. The expenditure on quality control measures is fixed overhead costs which tend to decline with the increase in sales. The sophisticated technology involved in drug production and its quality control call for a large supply of trained manpower. Only countries with an established fine chemicals industry and with relevant forms of training of its manpower can take care of various stages of pharmaceuticals production.

Concentration in Production

The data on global production of pharmaceuticals show that the developed countries account for a major share in it. A recent

study by UNIDO estimated the total production of pharmaceuticals in 1980 at $ 83,530 million. The developed countries in this had a share of $ 73,970 million (89 per cent) and developing countries, $ 9,560 million (11 per cent). Among the developed countries, the United States alone accounted for $ 18,600 million (22 per cent) worth of production, Western Europe for $ 27,440 million (33 per cent), Eastern Europe for $ 15,960 million (19 per cent) and the rest for $ 11,970 million (14 per cent). In the developing region, the share of Asia (excluding China) is put at $ 4,690 million (6 per cent), Latin America's $ 4,400 million (5 per cent) and Africa's $ 470 million (less than 1 per cent).[10] These data show that around 90 per cent of global production of pharmaceuticals originates in the developed countries. The leading drug transnational corporations based in these countries account for a major share of pharmaceuticals production therein. But the latest available data in this regard pertain to 1974. Table 2.4 displays the degree of concentration in pharmaceuticals production in 1970 and 1974. The table shows that in 1970, out of a total of $ 18,633 million worth of pharmaceutical sales in developed market economies, the first 10 leading firms accounted for a share of 27 per cent ($ 4,987 million), 20 leading firms accounted for a share of 42 per cent ($ 7,748 million) and the 30 leading firms accounted for a share of 50 per cent ($ 9,249 million).

TABLE 2.4

Concentration of Pharmaceuticals Production : 1970 and 1974

Particulars	*1970*		*1974*	
	Sales	*Percentage*	*Sales*	*Percentage*
Total sales of developed market economies	18,633	100	34,001	100
Sales of 1st 10 leading firms	4,987	27	9,498	28
Sales of 2nd 10 leading firms	2,761	15	5,063	15
Sales of 3rd 10 leading firms	1,501	8	3,121	9

Source : UNIDO, *The Growth of the Pharmaceutical Industry in Developing Countries, Problems and Proposals*, Table 3, p. 8.

In 1974 their respective share stood at 28 per cent ($ 9,498 million), 43 per cent ($ 14,561 million) and 52 per cent ($ 17,682 million). Given these trends, it is unlikely that much change could have occurred in their share of pharmaceutical sales in the recent past.

A point worth noting regarding the concentration of pharmaceuticals production is the dominance of US firms in the group of firms dominating the world pharmaceuticals market. Table 2.5 lists top nineteen international pharmaceutical companies ranked in terms of sales in 1978. Out of the 19 companies as many as 10 are domiciled in US, three each in West Germany and Switzerland, two in UK and one in France. These 19 companies generated

TABLE 2.5

Top Nineteen International Pharmaceutical Companies Ranked in Terms of Sale in 1978

Sl. No.	*Company*	*Country*	*Sales US m. $*
1.	Hoechst	West Germany	2,200
2.	Bayer	West Germany	1,890
3.	Roche	Swiss	1,380
4.	Merck & Co.	US	1,355
5.	Ciba-Geigy	Swiss	1,355
6.	American Home Pr.	US	1,279
7.	Sandoz	Swiss	1,242
8.	Pfizer	US	1,193
9.	Eli Lilly	US	1,063
10.	Boehringer Inglhein	West Germany	1,027
11.	Warner Lambert	US	971
12.	Rhone-Poulenc	France	907
13.	Upjohn	US	859
14.	Bristol-Myers	US	745
15.	Squibb	US	723
16.	Schering Plough	US	690
17.	Smith Kline	US	671
18.	Glaxo	UK	670
19.	Beecham	UK	635
	Total		20,855

Source : Scrip, *World Pharmaceutical News*, November 24, 1979.

total sales worth $ 20,855 million in 1978. In this, the US-based companies alone had a share of 46 per cent ($ 9,549 million). They were followed by three companies from West Germany, which accounted for 25 per cent share ($ 5,117 million), three companies from Switzerland which accounted for 19 per cent share ($ 3,977 million), two UK companies which accounted for 6 per cent share ($ 1,305 million) and finally one company from France which accounted for 4 per cent share ($ 907 million).

An important feature related to the large sales volumes of drug firms is that a major portion of these is generated abroad. Table 2.6 shows the percentage share of foreign sales to total sales of fifty transnational drug companies.

Table 2.6 shows that the share of foreign sales to total sales ranged upto 29 per cent for eight firms, 30-59 per cent for 27 firms, 60-89 per cent for 12 firms and 90 per cent and above for three firms. Out of eight firms having a relatively low share of their total sales abroad, six are Japanese and two American. The reason for Japanese and American firms (with the exception of Pfizer) having low foreign sales is that they have a large internal market to cater to. European firms on the whole account for more than 50 per cent of their sales abroad. Swiss firms account for the highest, around 95 per cent of their total sales abroad.

TABLE 2.6

Percentage Share of Foreign Sales to Total Sales of 50 Drug MNCs in 1977

Percentage share of foreign sales to total sales	*Number of companies*
Up to 29	8
30-59	27
60-89	12
90 and above	3
Total	50

Source : Derived from Table 6 of Annexure I of *UN, TNCs and the Pharmaceutical Industry*, 1979, p. 113.

A large proportion of foreign sales to total sales may imply that drug MNCs account for a major portion of domestic sales of

drugs of host countries where they operate. This seems to be the case. Thus, for instance, in 1975 these companies accounted for 100 per cent share in the production of drugs in Saudi Arabia, 97 per cent in Nigeria, 88 per cent in Venezuela, 85 per cent in Brazil, 75 per cent in India, 60 per cent in the UK, 50 per cent in Sweden, 45 per cent in France and 35 per cent in the Federal Republic of Germany. A large number of smaller firms account for rest of the percentage share of sales in most of these countries.[11]

So far we have analysed the concentration of pharmaceuticals production at a macro level. The concentration within the major drug groups of formulations is no less spectacular. Thus, for instance, in 1973, it took only two firms (Merck, 52.2 per cent and Geigy, 26.6 per cent) to account for 78.8 per cent of the total supply of anti-arthritics, two firms Upjohn (42.1 per cent) and Pfizer Roering (28 per cent) to account for 70.1 per cent of the total supply of oral hypoglycamies, two firms (Merck, 36.1 per cent and Geigy, 25.6 per cent) to account for 61.7 per cent of the total sales of psychostimulants, three firms (Lilly, 32.3 per cent, Johnson & Johnson, 13.1 per cent, and Winthrop, 11.1 per cent) to account for 56.5 per cent of the total sales of analgesics, one firm (Roche) to account for 55 per cent of the total sales of oral ataractics, and finally two firms (Schering, 28.6 per cent and Parke Davis, 24.3 per cent) to account for 52.9 per cent of the total sales of antihistamines.[12]

Concentration data with regard to the production of bulk drugs is scarce. However, the available data throw some light on the degree of its concentration. Thus in 1975, some 650 bulk medicinal chemicals were manufactured in the USA and of this total, nearly 500 were available from a single source. Ascorbic acid (Vitamin C) in dosage form is supplied by more than 100 firms but the entire output of Vitamin C itself is produced by Merck, Pfizer and Hoffman-LaRoche. Again, the sole manufacturer of the active gredient of reserpine products is S.B. Penick, though the products are supplied by at least 60 suppliers. Such a situation of high concentration of bulk drugs can lend its producers a strong position with regard to their selling policies.[13]

Before we proceed further, some comments on the nature of the pharmaceutical industry are called for. One of the important ways of distinguishing a competitive industry from monopoly or

oligopoly is to go by its ratios of concentration. This criterion enables us to treat the pharmaceutical industry as oligopolistic—because we have seen in the preceding paragraphs that thirty MNCs account for half of the total sales of pharmaceuticals in the developed market economies. And at the same time, a large proportion of total sales of pharmaceuticals in the developing countries is also accounted for by the affiliates of these TNCs, the remainder being served by a large number of local firms. However, it should be borne in mind that an oligopolistic industry is one which is dominated by (a) few producers, (b) its product mix is narrow, it turns out more or less homogeneous products, differentiated by usual means, and (c) the degree of interdependence among producers is very high. If we apply this criterion to the pharmaceuticals industry, we find that the industry may not qualify for an oligopolistic status. 'Even if this industry is dominated by a few MNCs, the range of products turned out by the industry is extremely wide. Moreover, most of these products are disease-specific with the result that the cross elasticity of demand between any pair of drugs is typically low or zero. This peculiarity forces us to believe that it makes no economic sense to describe the pharmaceutical market as an integrated entity. It in fact consists of a set of sub-markets segmented by the disease specificity. Because of this factor, different producing firms might as well tend to carve out a place for themselves which imparts them a virtual monopoly. It is quite possible that interests of different firms operate in such a manner that they end up capturing positions in the market where they take care not to make inroads into each other's domains. This hypothesis of sub-markets partaking the character of monopoly rather than oligopoly was tested by us with the help of matrix containing the column vectors of drugs and the row vectors of producing firms. The data pertained to 41, mainly foreign drug companies operating in India, producing 102 different drugs and having 40 per cent of total market share of sales of formulations. The 102 drugs are catagorised under 15 broad heads as follows. Drugs pertaining to (A) Alimentary system, (B) Cardio-vascular drugs, (C) Central nervous system, (D) Musculo-skeletal disorders, (E) Hormones, (F) Genito-urinary system, (G) Infections and infestations, (H) Nutrition, (I) Skin, (J) Metabolism, (K) Surgical, (L) Allergic disorders, (M) Diagnostic and clinical chemistry regents, (N) Cancer drugs, and (O) Respiratory

system. Table 2.7 containing the required data is set out in the following pages. Tables 2.8 through 2.10 are based on this table. These tables reveal several interesting features about market structure of drugs.

The horizontal reading of Table 2.8 shows that with the exception of one firm, the minimum number of products produced by firms are four and maximum are 20. The table further suggests that most of these firms have product range between six and ten. Table 2.9, showing the frequency distribution of product range and the number of firms producing them, shows that as many as 20, i.e., nearly 50 per cent of the total of 41 firms fall in this model group of 6-10 drugs range. Of the remaining 21 firms, 14 have product range between 1 and 5, 4 between 11 and 15 and only three firms are producing drugs numbering above 15.

A close reading of Table 2.7 indicates that multi-purpose drugs such as antibiotics, analgesics and vitamins falling respectively under the headings of infections and infestations, cardio-vascular drugs, and nutrition are produced in a competitive fashion by a large number of undertakings. Thus, for instance, there are 21 firms producing antibiotics, 20 firms producing analgesics and 16 firms producing vitamins. But the specific drugs such as anti-thyroids, oxytocics and carcinogenics falling respectively under Hormones, Genito-urinary system, and Anti-cancer drugs are being produced in a monopolistic fashion.

TABLE 2.7

Market Structure of Formactions Production*

A : ALIMENTARY SYSTEM

1. **Anti-Antacid/Antiflatulants**
   Boots
   Cosmec Farma Labs
   Dey's Medical
   East India
   M.I.T. Labs
   Nicholas Labs
   Organon
   Pharmed
   Richardson Hind.
   Roche
   Searle
   Warner Hind.

2. **Anti—Diorrhoel**
   Boots
   Cosmec Farma Labs
   Chowgule & Co.
   Dey's Medical
   Ethnor
   Merck S.D.
   Pfizer
   Sandoz
   Searle
   Smith K.F.

3. **Anti-Dysentry**
   Aristo Ph.
   Ciba-Geigy
   Geno Phar.
   May & Baker
   Ranbaxy

4. **Anti-Spasmodics**
   Boehringer Knoll
   German Rem.
   Hoechst
   Sandoz
   Smith K.F.

5. **Ataractics**
   Wyeth Labs.

6. **Cholagogue/B/Liapy Antiseptics**
   Sandoz

7. **Enzymes**
   East India
   E. Merck

8. **Gastro-Enterology Drugs**
   Griffon Labs.

9. **Laxatives**
   Dey's Medical
   M.I.T. Labs.
   Pfizer
   Pharmed
   Ranbaxy
   Roche
   Sandoz

B : CARDIOVASCULAR SYSTEM

10. **Anti-Anginal**
    Hoechst
    Nicholas Labs.

11. **Anti-Coagulant Solutions**
    McGaw Rav.

12. **Cardio/Glycosides**
    Sandoz

13. **Cardio-Vascular Drugs**
    Alkali CCI
    Burroughs Well.
    Ciba-Geigy
    German Rem.
    Griffon Labs.
    Martin & Harris

14. **Coronary Therapeutic Agents**
    Boehringer Knoll

15. **Cycostatics**
    Ethnor
    Roche

16. **Haemostatics**
    East India
    E. Merck

17. **Peripheral Vaso. Blood Lipid Lo. AG.**
    Pharmed

C : CENTRAL NERVOUS SYSTEM

18. **Analgesics**
    Aristo Ph.
    Burroughs Well.
    Ciba-Geigy
    Dey's Medical
    East India
    Geno Phar.
    German Rem.
    Griffon Labs.
    Hoechst
    Martin & Harris
    May & Baker
    M.I.T. Labs.
    Nicholas Labs.
    Pharmed
    Ranbaxy
    Reckitt & Colman
    Roche

*Source : (a) Central Index of Medical Specialities, Vol. 13 May 1982.
(b) OPDI Directory of Members, 1981.

Sandoz
Smith K.F.
Warner Hind.

19. **Anti-Cholenergic**
Chowgule & Co.
Pfizer
Sandoz
Searle

20. **Anti-Convulscent**
Alkali CCI
Sandoz

21. **Anti-Depressants**
Merck S.D.
Smith K.F.

22. **Anti-Emetics**
Searle
Smith K.F.

23. **Anti-Epileptic**
May & Baker

24. **Anti-Hypertensives**
Ethnor
Geno Phar.
German Rem.
Hoechst
Merck S.D.
Sandoz
U.S. Vitamins

25. **Anti-Parkinson**
Roche

26. **Anti-Psychotic**
E. Merck
Searle

27. **Anti-Pyretic**
Aristo Ph.
Ciba-Geigy
Dey's Medical
Geno Phar.
Hoechst
May & Baker
Nicholas Labs.
Pharmed
Reckitt & Colman
Smith K.F.

28. **Barbituary Capsules**
Abbot Labs.

29. **Cerebral Activators**
Sandoz

30. **CNS Stimulants**
Smith K.F.

31. **Haemorrihoidal Prep.**
East India

32. **Neuroleptic/Neurosedatives**
Sandoz

33. **Psychotherapeutics**
May & Baker

34. **Sedatives, Hyptonics**
Chowgule & Co.
May & Baker
Roussel Ph.
Roche
Sandoz

35. **Tranquilisers**
East India
May & Baker
McGaw Rav.
Smith K F.

D : MUSCULAR, SKELETAL DISORDERS

36. **Muscle Relaxants**
Burroughs Well.
Ethnor
May & Baker

37. **Rubefacients**
Smith K.F.

E. : HORMONES

38. **Anti-Thyroids**
Nicholas Labs.

39. **Corticosteroids**
C.E. Fulford
Cynamid
Dey's Medical
Organon

40. **Hormones & Oral Prep.**
Ciba-Geigy
E. Merck
German Rem.
Glaxo
Nicholas Labs.
Organon
Roussel Ph.

41. **Oral Contraceptives**
Ethnor
Searle
Wyeth Labs.

F. GENITO-URINARY SYSTEM

42. **Diuretics**
Ciba-Geigy
Hoechst
May & Baker
Merck S.D.
Pfizer
Searle
Smith K.F.

43. **Gynecic Therapeutics**
Ethnor
Organon

44. **Obstetrics**
Reckitt & Colman

45. **Oxytocics**
Sandoz

46. **Urinary Anti-Infective**
Dey's Medical
Ethnor
Warner Hind

G. INFECTIONS AND INFESTATIONS

47. **Anti-Amoebic**
East-India
Griffon Labs.
Martin & Harris
Sandoz

48. **Anti-Bacterials**
Burroughs Well.
Smith K.F.

49. **Anti-Cold**
C.E. Fulford

50. **Anti-Filarials**
Burroughs Well.
Chowgula & Co.
East India

51. **Anti-Fungal**
Boehringer Knoll

52. **Anti-Leprotic**
Burroughs Well.
M.I.T. Labs.

53. **Anti-Malarials**
Chowgule & Co.
May & Baker
Parke Davis
Ranbaxy

54. **Amoebicidal Prep.**
Boots
Roche
Searle

55. **Anti-Microbials**
Roche

56. **Anthelmintics**
Alkali CCI
Burroughs Well.
East India
Ethnor
Glaxo
Merck S.D.
M.I.T. Labs.

57. **Anti-T.B.**
Cosmec Farma Labs.
Cynamid

Dey's Medical
May & Baker
Pfizer
Ranbaxy
Warner Hind.

58. **Sulphas**
Ciba-Geigy
May & Baker

59. **Sulphonamides**
Roche

60. **Trichononcides**
Searle
Smith K.F.

61. **Vaccines**
Chowgule & Co.
Glaxo

62. **Antibiotics : Broad & Narrow Spec.**
Aristo Ph.
Boehringer Knoll
Burroughs Well.
C.E. Fulford
Cynamid
Dey's Medical
Glaxo
Griffon Labs.
Hoechst
Martin & Harris
May & Baker
Merck S.D.
M.I.T. Labs.
Nicholas Labs.
Parke Davis.
Pfizer
Pharmed
Roussel Ph.
Sandoz
Smith K.F.
U.S. Vitamins

63. **Antibiotics : Granules**
Abbot Labs.

H. NUTRITIONS

64. **Anabolics**
Cosmec Farma Labs.

65. **Anti-Anaemic**
Cosmec Farma Labs.

66. **Calliom Prep.**
German Rem.

67. **Calcium Range**
E. Merck
Sandoz

68. **Fungicides**
C.E. Fulford

69. **Hematinics**
Cynamid
East India
E. Merck
German Rem.
Glaxo
Griffon Labs.
Merck S.D.
Nicholas Labs.
Smith K.F.

70. **Paediatric Drops Susp.**
Abbot Labs.

71. **Proteins**
Merck S.D.

72. **Protein Injections**
McGaw Rav.

73. **Tonics**
Abbot Labs.
Boehringer Knoll
Cosmec Farma Labs.
East India
Griffon Labs.
May & Baker
Nicholas Labs.
Pharmed

74. **Vitamins**
Abbot Labs.
Boehringer Knoll

Chowgule & Co.
Cynamid
East India
E. Merck
Geno Phar.
Glaxo
Griffon Labs.
May & Baker
M.I.T. Labs.
Parke Davis
Pfizer
Ranbaxy
Roche
Sandoz

75. **Vitamin Injections**
Abbot Labs.
Dey's Medical

I. SKIN

76. **Acne Therapy**
Smith K.F.

77. **Anti-Scabatic**
Chowgule & Co.

78. **Anti-Septic (Cream)**
Boots
M.I.T. Labs.

79. **Anti-Tissues**
East India
Griffon Labs.
M.I.T. Labs

80. **Dermatological Prep.**
Smith K.F.

81. **Ophthalmic/Skin Lotion Prep.**
Alkali CCI
Dey's Medical
East India

J. METABOLISM

82. **Anti-Diabetes**
Boehringer Knoll
Hoechst
May & Baker
Pfizer
U.S. Vitamins

83. **Dextrose**
E. Merck

84. **Insulins**
Boots

K. SURGICAL

85. **Anaesthetic Drugs**
Alkali CCI

86. **Anti-Anaesthetics**
May & Baker

87. **Anti-Septics**
Reckitt & Colman

88. **Anti-Rheumatics**
Boots
Chowgule & Co.
May & Baker
Wyeth Labs.

89. **Plasma Volume Substitutes**
Hoechst

90. **Plasma Volume Expanders**
McGaw Rav.

91. **Transfusions**
Dey's Medical

L. ALLERGIC DISORDERS

92. **Anti-Allergic**
German Rem.

93. **Anti-Histaminics**
Boehringer Knoll
Ciba-Geigy
C.E. Fulford
Glaxo
Hoechst
Parke-Davis
Sandoz
Smith K.F.
Wyeth Labs.

94. Steroids
Merck S.D.
Pfizer
Roussel Ph.
Wyeth Labs.

M. DIAGNOSTIC

95. Diagnostic—Clinical (Chemical Reagents
Ethnor

N. CANCER DRUGS

96. Anti-Cancer Drugs
Burroughs Well.

O : RESPIRATORY SYSTEM

97. Anti-Carcinogenics
Cynamid

98. Anti-Asthmatic
Boehringer Knoll
East India
M.I.T. Labs.
Nicholas Labs.
Pfizer
U.S. Vitamins
Warner Hind

99. Circulatory/Respiratory System
Boehringer Knoll
May & Baker

100. Cough Syrups
Abbot Labs.
Ethnor
May & Baker
M.I.T. Labs.
Pfizer
Richardson Hind.
Searle

101. Decongestants
Burroughs Well.
Chowgule Co.
E. Merck
Pfizer
Smith K.F.

102. Anti-Arthritics
Ranbaxy

TABLE 2.8

Product Range of Firms

Product Firms	*Firms*
1 Product firm	0
2 ,, ,,	1
3 ,, ,,	0
4 ,, ,,	8
5 ,, ,,	5
6 ,, ,,	2
7 ,, ,,	5
8 ,, ,,	1
9 ,, ,,	4
10 ,, ,,	8
11 ,, ,,	1
12 ,, ,,	2

TABLE 2.8 (*Contd.*)

Product Firms	*Firms*
13 Product firm	0
14 ,, ,,	1
15 ,, ,,	0
16 ,, ,,	0
17 ,, ,,	0
18 ,, ,,	2
19 ,, ,,	0
20 ,, ,,	1
Total	41

Source : Table 2.7.

TABLE 2.9

Frequency Distribution of Product Range and the Number of Firms Producing them

Product Range	*No. of Firms*
1—5	14
6—10	20
11—15	4
16—20	3
Total	41

Source : Table 2.8.

Column (a) in Table 2.10 shows the number of drugs and Column (b) the number of firms producing these drugs. Thus out of 102 drugs, 48, i.e., nearly 50 per cent of the drugs are produced by single firms in the sense that there is only one firm producing the specified product and there are 48 such products. Similarly, in the case of 17 drugs there are two firms for each of the product. It should, however, also be noted from Column (c) that there are firms which have monopoly and duopoly hold in more than one product. Thus 48 and 17 drugs are produced by respectively 27 and 21 firms. This means that 21 firms (48 minus 27) in the group of 48 drugs have monopoly hold in more than one drug and

TABLE 2.10

Number of Products and the Producers thereof

No. of products (*a*)	*Total No. of producers for the drugs in* (*a*) (*b*)	*No. of firms producing drugs in* (*a*) (*c*)
48	1	27
17	2	21
6	3	13
8	4	22
5	5	17
1	6	6
7	7	29
2	8	14
2	9	16
2	10	18
1	12	12
1	16	16
1	20	20
1	21	21
Total 102		

Source : Table 2.7.

13 firms (17×2—21) in the group of 17 drugs have duopoly hold in more than one drug. A detailed matrix displaying these 48 drugs with their 27 producers, 17 drugs with their 21 producers and also 6 products with their 13 producers appears as an appendix of this chapter (Tables 2.11-2.13). These matrices specify the drugs in which the firms have monopoly, duopoly or oligopoly holds.

An important point that should be noted in Table 2.10 is regarding the production of drugs by a number of firms at the competitive level. We note that a large number of firms are engaged in the production of multipurpose drugs like antibiotics and vitamins. These two categories of drugs constitute more than one-fourth of the total market sales of drugs in our country. Our observations indicate that each company tries to monopolise

one or two products and also shares the market in the case of few products in an oligopolistic or competitive fashion. The firms are motivated to do this by the attraction of high per unit profit margins. But the drugs produced in this segment are largely disease specific and thus have a narrow base. The sales from these drugs cannot be of large size and may not be large enough to ensure financial viability of concerned companies. This consideration, being extremely important, forces these companies to enter in the segment of market where multipurpose drugs like vitamins and antibiotics are produced. Though the number of firms in this segment of market, *viz.*, antibiotics and vitamins, is large, one cannot hurriedly conclude that the market for this segment is competitive. As a matter of fact, most of these multipurpose producers of vitamins and antibiotics differentiate their products by their brand name and trade marks. The crowding of many producers in this segment is really due to the fact that each producer is interested in capturing and retaining its own share in the market. The reason for this is that the market is truly extensive and growing and any stake in this is likely to impart financial stability needed for risk-taking in other specific drugs, as illustrated above.

Given the foregoing example and our earlier discussion on the world-wide concentration of certain categories of drugs, we can see that the actual nature of competition and concentration would differ from one sub-market to another sub-market depending on such factors as the dominance of patented products, the importance of brand names, etc. Given this high degree of concentration within each group but also taking into account the concept of submarkets, the industry can only loosely be described as oligopolistic, with leading firms possessing substantial market power.

Implications of Concentration

A direct implication of concentration in an industry is that it renders price competition ineffective. The endeavour of firms engaged in such an industry is to compete through product or promotional competition rather than price competition. The rationale behind avoiding price competition is that in the long run the potential rival, not necessarily a new entrant, is likely to produce a like product and undersell it. This strategy on the part

of the rival, backed as it is by a strong promotional network, is difficult to repulse. It, therefore, becomes necessary to avoid competition through price right from the beginning so that market is preserved for itself for many years to come.

In the case of pharmaceuticals, competition through price becomes redundant on three additional grounds. First, the postulates of price theory, that the products selling at lower price would capture the market and fetch higher aggregate returns, are inapplicable in the case of drugs the demand for which is largely price inelastic. Secondly, once a company has succeeded with the help of its advertising campaigns in making the medical practitioners loyal to its brand names, the sales volume of its products is assured whether the prices are high or low. Thirdly, very often collusive oligopoly occurs between firms. During the Kefauver hearings in the USA, Military Medical Supply Agency narrated an interesting case of collusive oligopoly. The Agency made first purchase of Tetracycline in 1956 at 11 cents a capsule. The same price was charged for Auromycin—an earlier broad spectrum antibiotics. Within a few months the price of Tetracycline was raised to 17 cents per capsule. The price remained at this level for two years, irrespective of the volume purchased from the five different sellers. All of a sudden in June 1959, there was a brief fall to 14 cents a capsule but soon the price was restored to 17 cents a capsule. There was a remarkable uniformity even when the changes in price occurred. Admiral Knickerbrocker, the then incharge of purchases, stated that "on a number of procurements, more than one supplier initially offered the identical low price. Furthermore, even when one supplier was low, others came in at higher but identical prices, i.e., either the specific prices offered were the same—or they became identical when the prompt payment discount was applied."[14]

Theoretically, price competition at a smaller level may occur in the case of drugs whose patents have expired. This expiry of patents of established drugs may bring in new firms into their production line.[15] It does not require much effort on the part of these new entrants to manufacture the duplicates. And since the drug is already established, its sales approval is also easier to obtain from the local drug authorities. Moreover, since no additional administrative overheads and R & D expenditures are involved, the drug can be marketed at a cheaper price. This

would be particularly true of smaller firms that remain content with a relatively smaller share of the market and do not spend much on the promotional campaigns. The bigger firms, on the other hand, make elaborate cost-benefit analysis before entering into a particular market and also spend considerable amounts of money on their promotional campaigns.

But although it is possible that the new firms could enter into the production line of drugs whose patents have expired, there are cases which indicate that the firms whose patents on specific drugs have expired, try to discourage entry of new firms into their production line. For instance, the patent of chlorpromagine which was held by Smith Kline expired in 1970. In an apparent bid to discourage entry, the company cut its price in the same year by about 25 per cent. The result was, with the exception of Wyeth, which entered late in 1972, none of other two major firms—Parke Davis and USV—had entered the market before 1973.[16] And their sales in that year were relatively smaller (Table 2.15).

In the absence of any appreciable price competition, the axe falls on the promotional strategies of the firms. Perhaps in no other industry the advertising campaigns are so intense, elaborate and expensive as they are in the case of pharmaceuticals. Moreover, advertising in this industry differs from the rest on two more accounts. First, the medicines (except for the proprietary drugs) by law cannot be advertised to the general public. Second, the role of medical representatives—an interventing link between the firms and the physicians—is of crucial importance for the former and at the same time of a technical nature. Out of all the methods of promotional techniques such as advertisement through literature sent by post or distributed by hand, free samples, slide shows, advertisements in the medical journals, the role of medical representatives is recognised as of paramount importance especially when a new drug is to be promoted.

Table 2.14 depicts a standard breakdown of a pharmaceutical manufacturer's sales dollar. It can be seen that expenditure under the heading 'Advertising and Scientific Information' constitutes 20 per cent of expenditure on a dollar worth of sales. The expenditure under this head ranks second highest after expenditure on production and quality control.

There are several interesting features associated with the

promotional campaigns and the expenditures thereupon by drug firms. These are summed up in Table 2.15 and explained below.

TABLE 2.14

Standard Breakdown of a Manufacturer's* Dollar Worth of Sales

Particulars	*Cost Composition (per cent)*
Production and quality control	30
Advertising and scientific information	20
Research and development	15
Distribution	7
Administrative costs	6
Miscellaneous	7
Profit before tax	15
Total	100

* Ciba-Geigy

Source : U.N., *TNC & The Pharmaceutical Industry*, 1979, Note 14, p. 36.

First, the table shows that an early entrant in the market can maintain a high sale of its product even in the later years of its life, with a relatively low promotion expenditure than that of the new firms. For instance, in the case of Penicillin VK and V, Lilly introduced this drug in 1957 under the brand name of V-Cillin K. In the year 1973, its promotional expenditure against sales was only 3.68 per cent in contrast to, say, 32.78 per cent of Robin's Robicillin VK introduced in 1971. The fact that the drug has already become well known in medical circles does not in any way reduce the promotion expenditure of late entrants in the initial years. In fact it tends to be remarkably high in some cases. Thus, both Smith Kline and Lederle's promotion expenditure on sales of their drug propoxyphane hydrochloride marketed in 1973 under the brand name of SK-65 and Dolene stands at respectively 339.6 per cent and 155 62 per cent of their sales. These high promotion expenditures exceeding the sale proceeds of drugs only exhibit firms' bid to establish their product in the market. In actual practice, firms treat these high promotion expenses as some kind of fixed costs whose influence goes on declining as the sales pick up in the later years of the life of a drug.

TABLE 2.15

Drugs Marketed by Pharmaceutical Companies : Name, Year Introduced, Sales and Promotion Expenditure

Generic & brand names (Companies in the bracket)	*Year intro-duced*	*Sales '000 of US $*	*Promo-tion Ex-penditure '000 of US $ (1973)*	*4 as % of 3*
1	*2*	*3*	*4*	*5*
Penicillin VK and V				
V-Cillin K (Lilly)	1957	22,765	837	3.68
Compocillin UK (Ross)	1957	2,875	366	12.73
Pen Vee-K (Wyeth)	1958	7,736	717	9.27
Ledercillin VK (Lederle)	1968	2,070	552	26.67
Uticillin VK (Upjohn)	1970	911	79	8.67
Betapen VK (Bristol)	1970	678	340	50.15
Robicillin VK (Robins)	1971	1,446	474	32.78
Pfizerpen VK (Pfizer)	1971	1,110	204	18.37
SK-Penicillin VK (Smithkline)	1971	569	156	27.42
Penapar VK (Parke Davis)	1972	445	203	45.62
Tetracycline HCL				
Tetracyn (Pfizer)	1953	2,143	56	2.62
Penmycin (Upjohn)	1954	2,527	237	9.38
Bristacycline (Bristol)	1954	344	2	0.58
Sumycin (Squibb)	1957	10,568	886	8.38
Achromycin V (Lederle)	1957	8,331	477	5.73
Cyclopar (Parke Davis)	1970	421	117	27.79
Robitet (Robins)	1971	1,943	534	27.48
SK-Tracycline (Smithkline)	1971	543	205	37.75
Dama (USV)	1972	16	1	6.25

1	2	3	4	5
Erythromycin				
Ilotycin (Lilly)	1952	866	74	8.55
Erythrocin (Abbott)	1954	25,287	2,883	11.40
Erythromycin Stearate (Wyeth)	1954	188	—	—
Ilosene (Lilly)	1958	25,163	1,976	7.85
E-Mycin (Upjohn)	1968	5,978	534	8.93
Ethril (Squibb)	1972	1,137	419	36.85
Robimycin (Robins)	1972	787	648	82.34
SK-Erythromycin (Smithkline)	1972	649	133	20.49
Erypar (Parke Davis)	1972	588	139	23.64
Pfizer E (Pfizer)	1973	1,389	276	19.87
Propoxyphane Hydrochloride				
Darven (Lilly)	1957	17,369	265	1.53
SK-65 (Smithkline)	1973	293	995	339.60
Dolene (Lederle)	1973	169	263	155.62
Prednisone				
Deltasone (Upjohn)	1955	1,903	201	10.56
Meticorten (Schering)	1955	154	1	0.65
Servisone (Lederle)	1970	14	—	—
Chlorpromazine				
Thorazine (Smithkline)	1954	22,816	855	3.75
Chlorpromazine (Wyeth)	1972	156	17	10.90
Promapar (Parke Davis)	1973	167	32	19.16
Chlor PZ (USV)	1973	157	169	107.64

Source: Derived from Table 23, pp. 143-6, Annex. 1 of UN, *TNC and the Pharmaceutical Industry*, 1979.

Secondly, it can also be inferred from the table that even if a number of firms introduce a similar drug in the same year, some firms can command higher sales volume than others. Take, for instance, the case of Erythromycin. Squibb, Robins and Smithkline introduced this drug in 1972 under the respective brand names

of Ethril, Robimycin and SK-Erythromycin and had 1,137, 787 and 649 thousand dollars worth of sales in 1973. Corresponding to this, their respective promotion expenditures were 419, 648 and 133 thousand dollars, i.e., 36.85 per cent, 82.34 per cent and 20.45 per cent of their sales proceed. This means that Squibb had higher sales turnover than Robins with relatively much lower promotion expenditure. And Smithkline had a better sales performance with much lower promotion expenditure than that of Robins. The explanation for this perhaps lies in the relative effectiveness of firms' advertising strategies and its own standing in the market.

Finally, the table also shows zero expenditure on promotion in the case of certain drugs like Lederle's Servisone—brand name for Predyisone. There can be two explanations for this. First, the market hold of Upjohn and Schering's Deltasone and Meticorten is probably too strong to be invaded successfully by rivals and hence the latter's complacency over the available market share to them. Secondly, it is possible that the therapeutic effects of Deltasone and Meticorten are better than the rest, hence the physician's preference for the drug.

The high cost of advertising by drug companies has two direct effects. First, it directly affects the consumer in the sense that the cost of advertising is included in the price of drugs which the consumer buys. Earlier, in Table 2.6, we noted that advertising constitutes as high as 20 per cent of the total cost of a drug. Secondly, a direct by-product of mass advertising is the emergence of thousands of brand names which produce a bewildering array of different names for the same drug. In the USA, for instance, there are 14,000-35,000 brand names for 700 basic drugs on the market. Likewise, in the FRG there are 24,000, in Italy 21,000, in France 8,500 and in the UK 9,500. As regards LDCs, the available data show that there are as many as 14,000 branded drugs in Brazil and over 15,000 in India. In such a situation it is not unlikely for a physician to prescribe a costly branded drug even when a cheaper alternative is available.

We have examined in the preceding sections the special features of the pharmaceutical industry on the demand as well as on the supply side. We did not devote a separate section to the barriers to entry typical to this industry, for, as mentioned earlier, there exist built-in barriers to entry in the case of pharmaceutical

industry. The R & D factor which is of paramount importance, the issue of patents resulting from R & D, the highly skill-intensive operations both in the production of bulk drugs and of formulations and also at the quality control level, are all recognised as potential barriers to entry to this industry. Furthermore, non-availability of enormous funds required for elaborate advertising campaigns to survive in the market acts as an additional barrier to entry for new firms. It is thus not surprising that the concentration data for the '70s show no break in the hold of market share of some 30 drug MNCs which, as we saw earlier, accounted for around 50 per cent share of world sales of pharmaceuticals. It is difficult to predict as to how long it would take for the new firms to enter the market in a big way. This is because the entry of new firms into the industry could be rendered difficult if, other things being the same, the older established firms are acquiring new patents at least as fast as their old patents are expiring. This, coupled with the fact that many drugs such as a number of antibiotics are fast losing their efficacy and hence the market, may hinder the investment decision of many a new firm that otherwise might have decided to go into the production line of these older drugs.

Summary

We discussed in this chapter the economics of the pharmaceutical industry. The features on the demand side reveal that owing to the intrinsic life-saving nature of drugs and the intervening link—the medical practitioner—between the decision taker and the consumer *per se* make the demand for drugs price and income inelastic and also render ineffective for the consumer the role of tastes, complements and substitutes. The demand for drugs is mainly governed by such factors as the disease incidence and trends and population characteristics of a country. On the supply side, we notice the paramount importance of R & D of new drugs and the issue of patents resulting therein. Furthermore, the supply side is characterised by a large number of sub-markets segmented by disease specificity with cross elasticity of demand for drugs between these markets being typically low or zero. Though the industry is recognised as largely oligopolistic, monopolistic features prevail in the sub-markets for drugs. The nature of competition is promotional though price competition at a smaller level could be

found especially in the antibiotics market. Entry barriers to the industry result from almost a compulsive need to maintain R & D department from the patents held by large firms, and from highly skill-intensive operations both at the level of production of bulk drugs, formulations and also at the quality control level. Furthermore, elaborate promotional campaigns involving substantial costs are also a forbidding factor to entry for prospective entrants. Although it is difficult to predict precisely any realistic future trend, the hold of a few large firms on the total market share of drugs is likely to continue for some time in the future.

Notes and References

1. Barrie G. James, *The Future of Multinational Pharmaceutical Industry to 1990*, New York, Halsted Press, 1977, Table 2.3, p. 11.
2. United Nations, Economic Commission for Europe, Market Trends for Chemical Products 1970-75 and Prospects for 1980, 1978, Vol. I, p. 209.
3. The investment in R & D for a new drug is spread over several years. The equation, therefore, represents a stream of discounted expenditure which is offset by the resulting stream of discounted income. The equation determines the rate of return yielded by the projected stream of investment and income. If this expected return is high compared to that available for other investments, then the investment in R & D is feasible. The formula for this would be :

$$\frac{C_1}{(1+i)} + \frac{C_2}{(1+i)^2} + \cdots \frac{C_n}{(1+i)^n} + \frac{Y_{n+1}}{(1+i)^{n+1}} + \frac{Y_{n+2}}{(1+i)^{n+2}} + \cdots$$

$$\frac{Y_{n+m}}{(1+i)^{n+m}} = 0$$ where C=cost of research, Y=net income after associated costs, 1=discount rate. The subscripts stand for years. The C's have negative signs. The equation is to be solved for i, given the estimates of the C's and Y's.
4. Henry G. Grabowsky and John M. Vernon, "Structural Effects of Regulation on Innovation in the Ethical Drug Industry" in Robert T. Mason and P. David Quells (eds), *Essays on Industrial Organisation* (in honour of Joe S. Bain), Cam. Mass. Bellinger, pp. 181-205.
5. UN Centre on Transnational Corporations (CTC), *TNCs and the Pharmaceutical Industry*, 1979, Annex. I, Table 15, pp. 127-129.
6. Scrip, *World Pharmaceutical News*, 29th March 1975.
7. UN, 1979, op. cit., p. 61.
8. To cite an analogous example, the market demand for drugs for epidemics like cholera, small-pox and plague would have collapsed with the discovery

of vaccines for these epidemics and also because of the drive to wipe out these calamities by international agencies like WHO.

9. UN, 1979, op. cit., p. 31.
10. UNIDO, *Global Study of the Pharmaceutical Industry*, 1980.
11. UN, 1979, op. cit,, Annex. 1, Table 18, p. 133.
12. UN, 1979, op. cit., Annex. 1, Table 14, p. 125.
13. *Ibid*., p. 38.
14. US Senate Committee on the Judiciary Sub-Committee on Anti-Trust and Monopoly, 1960, Economic Concentration Hearings, p, 291.
15. It is, however, equally possible that the same drug was also duplicated with slight variations even before the expiry of its patent.
16. David Schwartzman, *Innovations in the Pharmaceutical Industry*, Baltimore Maryland, The Johns Hopkins Univ. Press, 1976, p. 287.

APPENDIX

Key for Product Groups

A=Alimentary system
B=Cardio-vascular drugs
C=Central nervous system
D=Musculo-skeletal disorders
E=Hormones
F=Genito-urinary system
G=Infections and infestations
H=Nutrition
I=Skin
J=Metabolism
K=Surgical
L=Allergic disorders
M=Diagnostic and clinical chemistry regents
N=Cancer drugs
O=Respiratory system

TABLE 2.11

Forty-eight Products Having no Competitor

1. **Barbituary CAP** [C]
   Abbot Labs.
2. **Antibiotic Granules** [G]
   Abbot Labs.
3. **Paediatric Drops & Suspension** [H]
   Abbot Labs.
4. **Anaesthetic Drugs** [K]
   Aristo Ph.
5. **Coronarytherapeutic Agents** [B]
   B. Knoll
6. **Antifungal** [G]
   B. Knoll
7. **Insulins** [J]
   Boots
8. **Anti-cancer drugs** [N]
   B. Wellcome
6. **Anabolics** [H]
   Cosme Farm.
10. **Antianaemic** [H]
    Cosme Farm.
11. **Antiscabatic** [I]
    Chowgule
12. **Anticold** [G]
    C.E. Fulford
13. **Fungicides** [H]
    C.E. Fulford
14. **Anticardiogenics** [N]
    Cynamid
15. **Transfusions** [K]
    Dey's Med.
16. **Haemorrihoidal Preparations** [C]
    East India
17. **Dextrose** [J]
    E. Merck
18. **Diagnostic & Clinical Chem. Reagents** [M]
    Ethnor
19. **Calcium Preparations** [H]
    German Rem.
20. **Antiallergic** [L]
    German Rem.
21. **Gastro Enterology Drugs** [A]
    Griffon Labs.
22. **Plasmavolume Substitutes** [K]
    Hoechst
23. **Antiepileptic** [C]
    May & Baker
24. **Psychotherapeuties** [C]
    May & Baker
25. **Antianaesthetic** [K]
    May & Baker
26. **Anticoagulent Solutions** [B]
    Mcgraw Rav.
27. **Protein Injections** [H]
    Mcgraw Rav.
28. **Plasma Volume Expenters** [K]
    Mcgraw Rav.
29. **Proteins** [H]
    M.S.D.
30. **Antithyroids** [E]
    Nicholas Lab.
31. **Peripherial Vesco Dil. Blood Low Ag.** [B]
    Pharmed
32. **Laxatives** [A]
    Ranbaxy

33. **Obstetrics** [F]
    Reckitt & Col.
34. **Antiseptics** [K]
    Reckitt & Col.
35. **Cycostatics** [B]
    Roche
36. **Antiparkinson** [C]
    Roche
37. **Antimicrobials** [G]
    Roche
38. **Sulphanomides** [C]
    Roche
39. **Antispasdomics** [A]
    Sandoz
40. **Cholagogue/Biliary Antiseptics** [A]
    Sandoz
41. **Cardioglycosides** [B]
    Sandoz
42. **Cerebralact Vatops** [C]
    Sandoz
43. **Neuroleptic/Neurosedatives** [C]
    Sandoz
44. **CNS Stimulators** [C]
    S.C.F.
45. **Rubefacients** [D]
    S.C.F.
46. **Acmetherapy** [T]
    S.C.F.
47. **Dermatological Preparations** [I]
    S.C.F.
48. **Ataractics** [A]
    Wyeth Labs.

Note : Alphabets in the brackets indicate the group to which the drug belongs.

Source : Table 2.6.

TABLE 2.12

Seventeen Products Having One Competitor

1. **Vitamins injections (A)**
   Abbot
   Dey's Med.
2. **Anticonvulscent (C)**
   Al & Ch. C. I.
   Sandoz
3. **Circulatory/Respiratory stimulants (O)**
   B. Knoll
   May & Baker
4. **Antiseptic cream (I)**
   Boots
   MIT Labs.
5. **Antibacterials (G)**
   B. Wellcome
6. **Antileprotic (G)**
   B. Wellcome
   MIT Labs.
   S.K. & F.
7. **Vaccines (G)**
   Chowgule & Co.
   Glaxo
8. **Sulphas (G)**
   Ciba-Geigy
   May & Baker
9. **Enzymes (A)**
   East India
   E. Merke

10. Haemostatics (B)
E. Merk
Ethnor

11. Antipsychotic (C)
E. Merk
Searle

12. Calcium range (H)
E. Merk
Sandoz

13. Gynecic therapeutics (F)
Ethnor
Organon

14. Antianginal (B)
Hoechst
Nicholas Lab.

15. Antidepressants (C)
M.S.D.
S. K. & F.

16. Antiemetics (C)
Searle
S.K. & F.

17. Trichomocides (G)
Searle
S.K. & F.

Note : Alphabets in the brackets indicate the group to which the drug belongs.

Source : Table 2.7.

TABLE 2.13

Six Products Having Two Competitors

1. Opthalmic/skin lotion preparation (I)
Alkali & Ch.
Dey's Med.
East India

2. Amoebicidal preparation (G)
Boots
Roche
Searle

3. Muscle relaxants (D)
B. Wellcome
Ethnor
May & Baker

4. Urinary anti-in-fective (F)
Dey's Med.
Ethnor
Warner Hind.

5. Anti-tissues (I)
East India
Griffon Labs.
MIT Labs.

6. Oral contraceptive (E)
Ethnor
Searle
Wyeth Labs.

Note : Alphabets in the bracket indicates the group to which the drug belongs.

Source : Table 2.7.

3

A Profile of the Pharmaceutical Industry in India

THIS chapter intends to present a cross-section view of the pharmaceutical industry in India. The first part deals with the historical development of the industry, its structure and ownership pattern. The second section analyses, on the demand side, the extent of drug consumption in India, and on the supply side the issues of research and development, production, capacity utilisation, concentration in production, employment, capital investment and international trade transactions in drugs and pharmaceuticals.

I. The Pharmaceutical Industry in Historical Perspective

Sufferings caused by various ailments are as old as life itself and man's efforts to alleviate these sufferings reflected his earliest attempts to survive on this planet. Barring a few instances, the disease forms have remained essentially the same through millions of years. Some of the oldest known human specimens show morbid bony growth on the femur. The studies of mummies suggests presence of arthritis, poliomyelitis and tuberculosis 4000 years before Christ. Skin lesions in some of the mummies suggest the presence of small-pox as early as 1100 B.C. There are also records of the use of herbal medicines from the days of the ancient Egyptians. Hippocrates in the 4th century B.C. taught the value of plants for treating human ills in ancient Greece. The earliest publication on the herbals dates back to 300 B.C., when Theophrastus, a pupil of Aristotle, wrote his *Historia Plantasum*. The first *Materia Medica* was written in A.D. 60 by Dioscrides, a Greek surgeon in the army of Nero. During the time of Galen, the Greek physician who practised in Rome in A.D. 200, a large variety

of herbs were in use. He classified them and developed the art of extracting their essential principles. The products derived from such herbs are, therefore, even today known as "galenicals". After the end of Graeco-Roman power the physicians from the East made notable contributions to 'Materia Medica' and added numerous remedies to the list. They also discovered various processes like distillation, sublimation etc.

Cullen is said to be the first man to arrange substances "according to their agreeing in some general virtue" and to recommend their usage. His work remained a standard reference for a long time with the new additions the physicians made from time to time. No real drug industry existed in the 18th century, the druggist being limited for the most part to analgesics, asperients, emetics, sedatives and cough linctuses.

Till the first half of the 19th century, doctors did not enjoy much social status and as a result very often they deserted their practices to devote themselves to the study of various diseases. It was then that substances like morphine, codeine, quinine, strychnine, ether and chloroform etc., were all isolated and synthesized. The second half of this century saw the wider use of crude drugs, such as belladonna, cascara, opium and nux vomica which turned the apothecary into bulk manufacturing. Surgery brought the real advancement in the medical sciences. This was made possible primarily because of Louis Pasteur's theory of germs, the discovery of antiseptics, chloroform and ether.

The discovery of the German Damagk of the first prontosil (sulphanamide) in 1935 was the first triumph of man's ingenuity over a variety of diseases. The discovery led to chemotherapeutic and antibiotic agents, and M & B 693 which is credited with the drastic fall in deaths from labour pneumonia. Then came the antibiotics, the first of which was penicillin followed by streptomycin in 1948. A number of antibiotics have since then come into the market. Neomycin appeared in 1949, oxytetracycline in 1950 and tetracycline three years later. In the field of mental illnesses, reserpine appeared in 1952 followed by chloromagine in 1955. In the 1960s librium and valium were added to the list by the Swiss while Americans added parnate, nardil and others. Since then there has been a steady flow of new drugs in the markets, primarily by American, British, Swiss and German firms, which have been the pioneers in drug research. Currently, as was pointed out in the

last chapter, 30 leading drug MNCs, mainly from these countries, control about 50 per cent of the world sales of pharmaceuticals.

The Pharmaceutical Industry in India :
The Early Years

The history of Indian medicine can be traced back to 800 B.C. when Ayurveda, the Hindu system of medicine, was part of the Atharva Veda. The classics of Indian medicine are treatises by Charaka and Sushruta (500 to 600 A.D.) which are primarily based on contents derived from the Vedic period. The Ayurvedic system dealt elaborately with the methods of preparation of drugs and flourished well till the coming of the Unani system which the Muslims brought with them. In due course, the Unani system also suffered a setback from western allopathic system which came with the Britishers. But the fact that despite the widespread use of allopathy, the traditional medical practice is still found to be in use in India only confirms the deep roots it has in the country even today. The early pioneers of the Indian pharmaceutical industry were Prof. P.C. Ray of Calcutta and Rajmitra B.D. Amin of Baroda. It was Prof. Ray who started the first Indian owned drug firm, the Bengal Chemicals & Pharmaceutical Works, in Calcutta in 1901. These pioneers had to contend with heavy odds of public prejudices towards allopathic medicines, foreign competition, and lack of governmental patronage. It was in the interest of the Britishers, then ruling India, to ship out various raw materials such as cinchona bark, nux vomica seeds, poppy pods etc., and sell back the finished products.

An important development of that time was Louis Pasteur's identification of pathogenic bacteria as the cause of many infectious diseases. The discovery led many British medical scientists to India to study the tropical infectious diseases which were taking a heavy toll of their army men. Thus, early government-sponsored state enterprises for pharmaceutical research—Haffkine Institute, Bombay (1899), King Institute of Preventive Medicine, Madras (1904), the Central Drug Research Institute, Kasauli (1905) and Pasteur Institute, Conoor (1907)—came into being.

The industry received a fillip during World War I when the local demand of allopathic medicines increased sharply and imports got almost completely cut off. A number of foreign firms and

national residents who had experience in ayurvedic preparations undertook to manufacture easy tonics as cough syrups and other easily preparable tablets and capsules. Production of quinine salts in two government factories which had been established earlier in the Darjeeling District in 1887 and in the Nilgiris Districts in 1890, increased during the war period. A new compound urea-stibamine developed by local R & D effort was found to be highly effective against kala-azar, a scourge of those days. Production of caffeine from tea waste, and surgical dressings was established during this period, which also witnessed increased manufacture of galenicals and other simple drugs.[1]

With the resumption of imports of pharmaceutical products immediately after the war, competition sharpened and the infant industry received a setback. Despite this adverse situation the industry picked up, albeit slowly, and by 1930 the manufacture of biologicals like sera and vaccines, anaesthetics like ether and chloroform, and a few simple drugs based on coal-tar distillation products had begun. The manufacture of tetanus anti-toxin was also taken up for the first time. But on the whole the industry's progress was slow till 1939, to say the least, as it was catering to only 13 per cent of the country's medical requirements.[2]

The outbreak of World War II was a blessing in disguise to the industry which started undertaking the production of a number of drugs in the category of phytochemicals based on indigenous raw materials and several synthetic drugs and biologicals. It was during this period that the manufacture of anti-dysentry drugs, iodochlor/dio-iodohydroxyquinoline, and chemotherapeutic drugs such as arsenicals, antileprotic drugs and colloidal preparations of calcium-silver manganese, iodine etc., were taken up along with the production of glandular products like liver extracts, pituitary extracts and adrenaline solutions. However, most of the manufacturing was done on imported raw materials. And since the demand for drugs did not subside after the war, the industry maintained its developmental tempo. The production of drugs and pharmaceuticals had reached the level of Rs. 10 crores in 1947, the year India attained her independence.

Post-Independence Development

After independence, government launched a programme of planned industrialisation. This programme received a big push after

the second plan was launched. The philosophy behind planning for industrialisation in India was very simple. It was based on the principle of self-reliance. With this aim in view, massive public sector investments supported by a similar effort in the private sector laid the foundation for this kind of self-reliant growth. This effort implied the creation of a domestic market through restriction of imports and enlargement of the services sector. With these supporting elements, investible resources were allocated for projects in the public and private sectors—projects that constituted an interconnected set of investments to satisfy a desired set of final output. This strategy did result in expanding the size of domestic market for each industry and in changing the composition of domestic industrial output. One can easily verify these observations by noting that India now produces more of intermediate and basic industrial output than consumer goods. This transformation is so important that the growth of any industry cannot be discussed without keeping in mind this general context. We, therefore, review below the progress of the pharmaceutical industry in the context of the five year plans.

In 1948, a survey was made of the country's industrial potential in all the sectors and a programme of development was projected in the first five year plan which was subsequently followed every five years. During the first plan period, India was self-sufficient in all the galenical preparations, most of sera and vaccines, liver extracts, alkaloids like morphine, codeine, strychnine etc. and also in the production of santomin, belladona, digitalis and hyoscyamus preparations.[3] But only negligible progress was made in the production of basic chemicals required for the manufacture of synthetic drugs and chemo-therapeutic compounds largely used in the country. Synthetic drugs like P.A.S., novitrone, luminal (phenobarbitone), para-acetylamino benzaldehyde thio semi-carbazone were produced in small quanities and hence met only a fraction of the total demand.[4] A large number of essential drugs and raw materials—mainly penicillin, streptomycin and other antibiotics, sulpha drugs, glandular products, vitamins and anti-leprosy drugs—were imported. In order to reduce the dependency on imports and increase the production of antibiotics (constituting around 35 per cent of total import of drugs), especially penicillin and streptomycin, Hindustan Antibiotics Limited (HAL), a public sector undertaking, was set up in 1954 at Pimpri, near Pune. The

cost of the project was estimated at Rs. 2 crores and it was expected to produce 4 lakh mega units of penicillin per month. At the same time, private enterprises were encouraged to enter into the production of sulpha drugs. The production of diaminodiphenyl sulphane was also begun by some Indian firms with the indigenously available raw materials. Among the glandular products, the production of insulin was being planned for production with the help of foreign technical assistance.

During the second five year plan, the tempo of the development of pharmaceutical industry was maintained. The second five year plan was essentially a plan of industrialisation and hence medium and large-scale industries were assigned top priority. To ensure efficient working, the pharmaceutical industry was placed under the purview of the Industries (Development & Regulation) Act and put under the guidance of the Directorate General of Technical Development (DGTD). The principal function of DGTD is to bring about, *inter alia*, an integrated development of all allied chemical-based industries. This policy has led to a concurrent growth of the related industries in a planned manner.

In the case of synthetic pharmaceuticals such as saccharin, chloramin-T, acetylsalicylic acid and sulpha drugs, progress was planned in the direction of increased production as well as development from basic primary organic chemicals and intermediary products in place of the existing operations based on penultimate products. The industry was also expected to derive considerable benefit from steps taken to develop the manufacture of dyestuff intermediates which could provide several of its raw materials to the pharmaceutical industry. In the case of vitamins, the study for the scope of the production of vitamin A from lemon grass oil, an indigenous raw material, was undertaken. As regards antibiotics, besides the production in HAL, some private undertakings were expected to come up. Investment in the private sector of the pharmaceutical industry was expected to reach Rs. 3 crores.[5]

Major developments in the public sector during the third plan period were expected to involve a combined outlay of Rs. 27.30 crores for the following projects.[6]

(1) Synthetic drugs project at Santanagar, Andhra Pradesh, covering the manufacture of sulpha drugs, vitamins, pharmacetin, other synthetic drugs (INH, Luminal, Chloroquin, etc.,) and intermediates (including ASC at 1500 tons per year) with annual output

worth Rs. 6.4 crores.

(2) Antibiotic plant near Rishikesh, U.P., covering the manufacture of penicillin, streptomycin, chloro and other tetracyclines, new antibiotics within annual value of output of Rs. 26 crores.

(3) Phyto-chemicals plant in Kerala, covering the manufacture of caffeine, ephedrine, digitalis glycosides, lanatagides, ergat alkaloids, atropine, scopolamine, reserpine, papin—vitamin P with an yearly output of Rs. 0.77 crores.

Provisions were also made for the manufacture of phyto-chemicals in six States.

Besides these developments in the public sector in the third five year plan period, private capital and technology had started flowing in. Relatively liberal guidelines regarding foreign capital spelt out in the first plan document led many foreign companies to open their branches/subsidiaries in India. The plan explicitly stated government's stand regarding foreign capital as follows:[7]

(a) There will be no discrimination between foreign and Indian undertakings in the application of general industrial policy.

(b) Reasonable facilities will be given for the remittance of profits and repatriation of capital, consistently with the foreign exchange position of the country, and

(c) In the event of nationalisation, fair and equitable compensation would be paid.

The plan further stated that in view of the fact that the investment of foreign capital necessitates the utilisation of indigenous resources and also that the best use of foreign capital acts as a catalytic agent for drawing forth larger resources for domestic investment, it is desirable that such investment should be channelised into fields of high priority. "The broad principle to be followed is that foreign investment should be permitted in spheres where new lines of production are to be developed or where special types of experience and technical skill are required or where the volume of domestic production is small in relation to demand and there is no reasonable expectation that the indigenous industry can expand at a sufficiently rapid pace."[8]

Government's policy towards foreign capital has changed little since what was spelt out in the first five year plan. Although this realistic attitude of government towards foreign capital may be said to have helped in attracting international drug companies to India, it would be incorrect to assume that this was a

characteristic feature behind their entry into the Indian market. The dates of establishment of business place in India of 46 foreign drug companies appear in Table 3.1. It can be seen from this table that 23, i.e., half the total number of companies already had a place of business in India before the first five year plan was launched. Six companies each entered the industry during the second and third plan while seven companies came during the fourth plan and four while the annual plans (1966-69) were in progress. There are, however, no proper data available on companies which may have left India. An examination of available data from the Department of Company Affairs shows that no major pharmaceutical company has wound up its business in India. This is not surprising in view of the attractiveness of the Indian market in terms of profitability and high degree of protection available to both foreign and domestic firms operating in the country.

TABLE 3.1

Time Pattern of Entry of Foreign Drug Firms in India

Established	*No. of companies*
Up to 1947	13
1947-1951	10
1951-1956	6
1956-1961	6
1961-1966	7
1966-1969	4
Total	46

Sources : (a) Ministry of Petroleum, Chemicals and Fertilisers, GOI, *Indian Drug Statistics*, (b) Company Reports.

The major factors that led to the post-Independence influx of foreign drug companies in India, besides superior technology held by them, are the large size of the market and a relatively larger demand for drugs, milder drug control measures and the absence of local competition. In addition, the government's policy of industrialisation by way of import substitution, especially from the second plan onwards, provided a seller's market protected by high

tariff walls and other import restrictions. These factors also helped the expansion of firms already operating in India at the time of independence. In retrospect, the stated second plan objective of self-reliance was seemingly never made applicable to the drug industry, presumably because there were no alternatives available to drug technology held by the MNCs.

The fourth and fifth plans make no specific mention of the pharmaceutical industry. And the sixth five year plan only comments on the requirement of bulk drugs and formulations in 1982-83, estimated at respectively Rs. 550 crores and Rs. 1,900 crores. The production target envisaged for bulk drugs is Rs. 425 crores, leaving a gap of Rs. 125 crores for imports. A provision of over Rs. 100 crores has been made for HAL and IDPL for increasing the production of bulk drugs and formulations. In addition, a provision of Rs. 5 crores has also been made for the expansion of drug production in the public sector in the Eastern Region.[9]

A direct effect of large-scale development of the modern pharmaceutical industry in India has been the boost it has given to a host of secondary and ancillary industries producing a wide range of materials, such as glass bottles, vials and phials, cardboard boxes and cartons, metal cans, aluminium sheets, tubes and foils, ampoules, rubber stoppers and so on. But as yet, precise information on actual consumption of all these materials by the entire industry is not available. A rough measure for 200 odd units indicates that the value of packaging materials consumed by these units amounted to Rs. 28.56 crores in 1969. These were further estimated at Rs. 57.12 crores in 1976.[10] The ancillary industries have in fact geared themselves to meet the specialised and expanding requirements of the pharmaceutical industry. Moreover, by undertaking to manufacture its own requirements of the chemical substances, the pharmaceutical industry has added a new dimension to the growth of its parent—the chemical industry.

Structure of the Industry and Ownership Pattern

Coming to the structure of the industry, we find that the industry has evolved into its present shape in three broad sectors : (1) the large scale, (2) the small-scale sector, and (3) the informal (or unregistered) sector.

The large-scale sector consists of units with a minimum investment of Rs. 1.0 crore in plant and equipment. These units are required to have an industrial licence in addition to the registration with the Directorate General of Technical Development (DGTD) of the Central Government. The small-scale sector consists of units with investment of Rs. 7.5 lakhs in plant and equipment. These units are not required to hold any industrial licence but it is mandatory for them to register with local State government agencies. These two sectors comprise what can be called the "registered sector" of the pharmaceutical industry. The informal sector of the industry comprises technical/medical practitioner manufacturers. It is 'unregistered' and no authentic information is available on this sector. Furthermore, the latest data pertaining to the number of units operating in the 'registered sector' (and the ownership pattern therein) are available for the year 1971-72 only. These appears in Table 3.2.

The table shows that in 1971-72 there were 116 units operating in the large-scale sector of the industry ; 25 with full majority foreign ownership, 20 with foreign minority ownership, 69 with full Indian ownership and 2 as public sector undertakings.

TABLE 3.2

Industry Structure and the Ownership Pattern[12] of the Pharmaceutical Industry (1971-72: Registered Sector)

Particulars	*Large-scale sector*		*Small-scale sector*		*Total*	
	No.	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*
Full majority foreign ownership	25	21.6	9	0.39	34	1.4
Foreign minority ownership	20	17.2	12	0.52	32	1.3
Indian full ownership	69	59.5	2303	99.09	2372	97.2
Public sector	2	1.7	—	—	2	0.1
Total	116	100.0	2324	100.0	2440	100.0

Source : Ministry of Petroleum and Chemicals, Report of the Committee on Drugs and Pharmaceutical Industry in India, 1975.

As regards the small-scale sector, the table shows that there are altogether 2324 units operating in it : nine with full foreign majority ownership, 12 with foreign minority ownership and an overwhelming number of 2303 units with full Indian ownership.[11] But as we shall see later, this large number of units in the small-scale sector provide only a small portion of total output of drugs in the country. As regards ownership pattern, Table 3.2 shows that the pharmaceutical industry is characterised by four broad categories of ownership : (1) Full majority foreign ownership, (2) Foreign minority ownership, (3) Indian full ownership, and (4) Public sector undertakings.

Full majority foreign ownership units consist of branches as also of fully (100 per cent equity) and partially (51 per cent or more) owned subsidiaries. In 1971-72, out of 66 units operating with foreign equity participation, 34 were full majority ownership, 25 in the large and nine in the small-scale sectors. Out of these 34 units, six were operating as branches, four as fully owned subsidiaries, and 24 with foreign equity ranging from 50-99 per cent.[13]

Foreign minority ownership units hold non-resident equity upto 49 per cent. Table 3.2 shows that there were 32 such units in 1971-72; of these, 20 were operating in the large-scale sector and 12 in the small-scale sector. The Report of the Committee on Drugs and Pharmaceutical Industry[14] has pointed out that out of these 32 units, as many as 15 had non-resident equity share ranging from 40 to 50 per cent, 11 between 26 and 40 per cent and six below 26, per cent. It is, however, well known that even with a relatively smaller share in the equity, the foreign company can control the affairs of the company, particularly through the restrictive clauses in the technology and management contracts.

The third category of ownership comprises fully Indian-owned units. Table 3.2 shows that there were 2372 such units in 1972 ; of these, 69 were operating in the large-scale and 2303 in the small-scale sector. It is alleged that, like those of foreign minority ownership units, many of these Indian-owned firms which have at least some links with foreign firms are also subject to indirect control by their foreign collaborators.

Finally, there are two public sector undertakings, Hindustan Antibiotics Limited (HAL) and Indian Drugs and Pharmaceuticals Ltd. (IDPL), established respectively in 1951 and 1964. These two units have laid the national foundation in the production of drugs,

but unfortunately both of them are running in losses.[15]

II. Features on the Demand Side :

The Extent of Drug Consumption in India

Earlier during our discussion in Chapter 2 on the economics of the pharmaceutical industry, we held the view that there exists a number of sub-markets for drugs segmented by disease specificity. It, therefore, would not make much sense to aggregate these sub-markets and call them as one integrated market for drugs. Analogously, if we are to study the extent and pattern of drug consumption in a particular country, we should have individual consumption functions for these sub-markets, taking into account all the important factors affecting the demand for drugs. In Chapter 2 we had also stated that the demand for drugs in a society is governed by a complex gamut of factors such as disease incidence and trends, population characteristics, and social and physical environment. Disease incidence and trends relate to mortality and morbidity in a society. Birth and infant mortality rates, diseases pertaining to old age and prolonged sicknesses occurring in other age-groups, affect the demand for drugs. These factors in turn depend upon such demographic aspects like the population size, its growth rate, age and sex distribution, degree and trends in urbanisation, access to public health centres, and levels of income and education. There is no gainsaying the fact that all these are important factors that affect the demand for drugs. But determination of their influence on the extent of drug consumption poses serious problems for the simple reason that most of these factors cannot be quantified to any reliable degree of accuracy in any statistical exercise. Hence, for instance in the case of India, we could account for only the relative prices of drugs and the real income of the consumers as two important factors affecting the demand for drugs. However, it is our presumption that if drug consumption is related only to real income, the resulting function over a period of time would take the following shape (Figure 3.1).

The 'S' shaped curve in Figure 3.1 can be interpreted in two different ways for a developed and an underdeveloped country. In the case of a developed country, the curve can be looked upon as a kind of developmental parameter. If we plot data pertaining to drug consumption and the income levels for a sufficiently long

period it could take the 'S' shape corresponding to the shape of consumption function for durable goods. This curve would indicate that initially with a rise in income the consumption of drugs will also rise (A to C). But after society has attained a sufficiently high standard of living, the expenditure on drug consumption would saturate (C—D). In the case of an underdeveloped country, the curve in Figure 3.1 can be interpreted at any point of time to explain the interclass differences. Thus the region A to B in the curve can be taken to be representative of consumers in the poor strata of society, where the income is minimal and although the disease incidence is high, its occurrence results only in an insignificant increase in expenditure on drugs. Region B to C could apply for the economically lower and higher middle sections of society where with any degree of disease incidence, the expenditure on drugs is also high. Region C to D could be the region for the

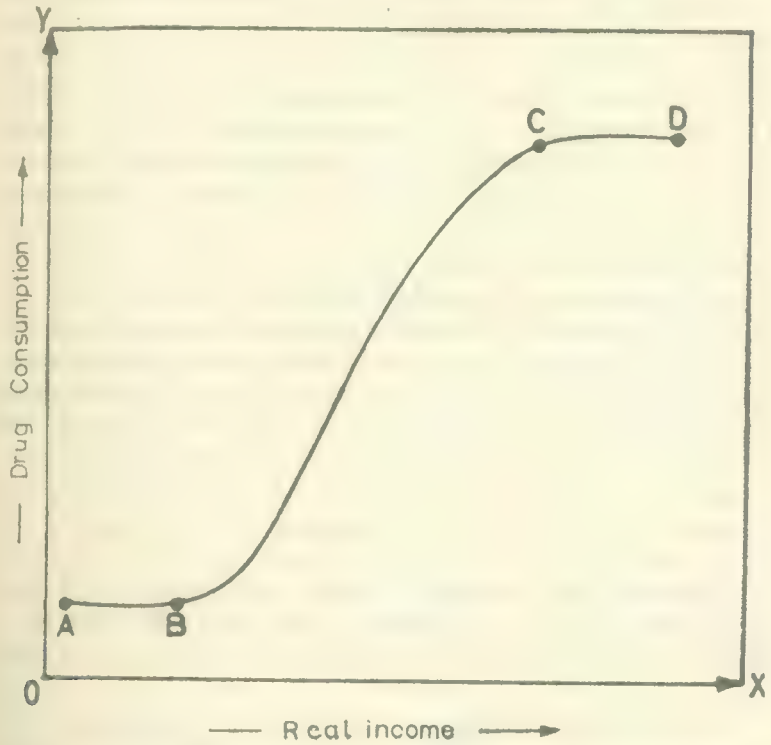


Fig. 3.1 : Relationship between real income and drug consumption over a long period of time.

richer section of society where the disease incidence is low and so is the incremental expenditure on drugs.[16] As stated, data for a long period are required if the validity of this 'S'-shaped curve is to be examined. Since long-period data were not available, we could not undertake this exercise for India and hence could not examine, *inter alia*, as to on which part of the curve in Figure 3.1 we are positioned in relation to the consumption of drugs. However, in the case of countries like the US and UK this exercise can be undertaken and whether the long-run consumption function takes an 'S' shape or not can be verified. We have come across no such case in the literature and we did not think it was within our scope to undertake such an exercise.

In the case of India, proper data relating to consumption of drugs could be had for the 17-year period—1960-61 to 1977-78. We undertook an exercise of estimating a macro consumption function of drugs for this period by taking per capita consumption of drugs as dependent variable and per capita real income, and relative drug prices as independent variables. A third variable, population growth, could be indirectly accounted for, since, given a particular rate of growth, the per capita income varies inversely with the rise in population. The following results are inferred from our statistical exercise. But owing to limitations cited earlier, these results should be taken only as broad indicators pertaining to drug consumption in India. There is, however, an additional factor in the case of our country which could seriously limit the validity of these results. It is asserted that in India only about 30 per cent of the population residing in urban and semi-urban areas avail themselves of allopathic medicines. Hence any statistical exercise should ideally be carried out by taking into account the per capita real income of this section of the population only. This obviously is a complicated task in itself and we found it beyond the scope of our exercise. However, the per capita consumption of drugs could be arrived at by taking account of only this section of the population. But we could not venture, meaningless as it would have been, to fit any regression equations for this 30 per cent section of the population without altering their per capita real income.

We fitted in all six equations—3 linear and 3 log-linear. The data base of these equations and the results thereof appear in Tables 3.5 and 3.6 in the appendix of this chapter. Table 3.5

indicates that per capita consumption of drugs in India at constant 1961-62 prices has increased steadily from around Rs. 3.00 in the early sixties to around Rs. 10.00 at present. If we account only 30 per cent of the population as the main consumer of allopathic drugs, the data show that the per capita consumption of drugs for this section of the population which was around Rs. 10.00 in the early sixties has increased to about Rs. 30.00 at present.

Table 3.6 shows that most of the regression equation explaining more than 80 per cent of the variation could be fitted. The T test for the majority of the variables in the equations and also the F test for R^2 are found to be statistically significant both at 5 and 1 per cent levels of significance.

In all these equations the consumption of drugs is found to be positively correlated to real income, indicating that a rise in income would lead to rise in drug consumption. The coefficient of per capita income shows that with a rupee rise in income the drug consumption would increase by six paise. The log linear coefficients depicting the elasticities suggest that with a one per cent rise in income the drug consumption would go up by around 3 to 5 per cent. This income coefficient is high enough for us to arrive at a hunch that we are currently passing through region B and C in Figure 3.1.

The ratio of drug prices in the equations is found to be negatively correlated to drug consumption, suggesting that a rise in drug prices would result in a fall in drug consumption. The coefficients suggest that if the ratio increases by one point the consumption could decline by four units. The log linear coefficients indicate that with a one per cent increase in the ratio, drug consumption could fall by around 0.91 per cent.

III. Features on the Supply Side

Research and Development in the Pharmaceutical Industry in India

The issue of research and development of drugs was earlier discussed in Chapter 2. It was pointed out that R & D of new drugs is essential if firms are to survive in the market. But, while the drug MNCs maintain elaborate R & D networks in their home countries, it is commonly found that they make no worthwhile attempts to initiate any R & D programme through their affiliates in the host countries in which they operate. The governments

in these countries also fail to undertake any detailed R & D projects because of many constraints, including financial and the non-availability of qualified personnel. In the section below we discuss the issue of R & D of drugs in India and examine the measures adopted so far in this direction by both the public and the private sector units, the adequacy of these measures and the probable future course.

Research and development of drugs is broadly carried out in two different sectors in India : (i) public, and (ii) private.

Public Sector

The public sector comprises two different sets of units : public funded research institutes and public sector undertakings. The Indian Council of Medical Research (ICMR) is the supreme body entrusted with the basic task of funding research projects at various research institutes and medical colleges. Besides its own Pasteur Institute which manufactures vaccines of various types, the ICMR is itself engaged in research work connected with vaccine development. It also controls research laboratories of the Council of Scientific and Industrial Research (CSIR). The CSIR has two research institutes devoted exclusively to drug development, *viz.*, the Central Drug Research Institute and the Indian Institute of Experimental Medicine. In addition to this, the National Chemical Laboratory (NCL) and various regional laboratories cater to the problems connected with the manufacture of intermediate compounds, basic pharmaceuticals and drugs of plant origin.

There are six public sector and government managed units in the country which undertake R & D works in one form or the other. Out of these six units, Hindustan Antibiotics Limited (HAL), Indian Drugs and Pharmaceuticals Ltd. (IDPL) and Smith Stanisreet Pharmaceuticals Ltd. are undertakings of the Government of India ; Bengal Chemical and Pharmaceuticals Ltd. and the Bengal Immunity Co. Ltd. are managed by the Government, and the Haffkine Bio-Pharmaceutical Corporation Limited is a Government of Maharashtra undertaking.

Private Sector

The units in the private sector comprise Indian and foreign companies. As we saw earlier, the private sector in India is

characterised by a large number of small-scale units (over 2300 in 1971-72). Most of these units do not have any R & D department and in many cases the R & D works of these units are not recognised by the Department of Science and Technology. This department recognises the R & D activities of only 20 Indian and 12 foreign units, i.e., units with at least some measure of foreign equity participation.[17]

Performance of Public and Private Sector Units in the R & D of Drugs

Public Sector Units

Some of the units in the public sector have made notable contributions towards the R & D of drugs. Smith Stanistreet, for instance, set up in 1920 the plant for extraction of strychnine and brucine from nux vomica seeds which in course has become the oldest and largest plant of its kind in the world. Its installed capacity of 7,000 kg. each of strychnine and brucine gained international recognition. The Bengal Immunity Co. Ltd. introduced for the first time in 1928 diphtheria antitoxin serum and antibacterial sera and in 1933 the anti-meningococcus and tetanus antitoxin sera with indigenous technology. The Haffkine Institute, so called then, developed the plague prophylactic vaccine as early as 1896. More recently, HAL discovered hamycin in 1961 and antiamoebin (an anti-helmintic antibiotic) and aureofungan (an anti-fungal antibiotic) in 1966.[18] These developments, though important in their own right, tend to be insignificant when compared with the overall revolution in the R & D of new drugs that has taken place since the second half of this century. A number of explanations have been forwarded for the non-success of R & D of new drugs in State-owned units. The best of the observations are, however, made in an UNCTAD Report on 'Technology Transfer in the Pharmaceutical Industry in India'.[19] The report carried out a survey on the industry's opinion for the reasons behind the non-success of drug R & D works of public sector units in India and came out with the following conclusions :

(i) The processes developed by the national laboratories are economically not feasible as the cost of production is very high.

(ii) The technical data supplied by the laboratories are

incomplete, which creates operational difficulties for the firm utilising the laboratory knowhow.

(iii) While the basic chemical and intermediate compounds are easily available to the government-run laboratories, the industry faced great difficulties in obtaining them due to the foreign exchange constraints and import control.

(iv) There is a lack of communication between laboratory personnel and industry technologists, and

(v) Finally, most of the work carried out in the national laboratories is of an academic nature and hence cannot be directly applied to the production of drugs in demand.

Private Sector Units

Whereas, the foregoing factors account for the non-success of R & D works in public sector units, the reasons behind the failure of private sector units (mainly foreign) in the development of new drugs are directly reflected in their meagre spendings on R & D work. Data collected on R & D expenditure of foreign drug companies operating in India also lend support to the contention that foreign drug companies spend a meagre amount on the R & D work in host countries. Table 3.7 depicts the percentage of sales revenue invested in R & D for the period 1973-75 and 1977-79 by 42 foreign drug companies. The average for these companies shows that not in a single year did the expenditure on R & D exceed 2 per cent of their sales revenues. At the individual level, however, companies like Glaxo, Hoechst, May & Baker, Searle and Wyeth spent a relatively higher percentage of their sales on R & D. But, as can be seen from Table 3.7, they too are not consistent in this spending which fluctuates from year to year. It is alleged that very often the high expenditure shown by drug firms on their R & D account includes non-R & D expenditure and further, in most cases, the efforts of many a company centre around making minor improvements in the existing drugs.

Measures to enhance R & D Activities

It seems that the government has realised, albeit late, the failure of both the public and private sector units to enhance their R & D activities to any appreciable extent and has also felt an acute need for initiating R & D activities in the country. This concern of the government is reflected in the last drug policy

TABLE 3.7

Percentage of Sales Revenue Invested in R & D by 42 Foreign Drug Companies in India : 1973-75 and 1977-79

Sr. No.	*Name of the firm*	*Percentage of turnover invested in R & D*					
		1973	*1974*	*1975*	*1977*	*1978*	*1979*
1		*2*	*3*	*4*	*5*	*6*	*7*
1.	Abbot Labs. I. Ltd.	1.00	0.40	0.40	n.a.	n.a.	n.a.
2.	Alkali and Chemical Corpn. Ltd.	Nil	Nil	Nil	n.a.	n.a.	n.a.
3.	Anglo French Drug Co. Ltd.	1.70	1.70	2.30	n.a.	n.a.	n.a.
4.	Bayer (I) Ltd.	Nil	Nil	Nil	0.02	0.04	0.03
5.	Beecham (I) Ltd.	Nil	Nil	Nil	n.a.	n.a.	n.a.
6.	Boehringer Knoll Ltd.	2.50	2.00	0.50	0.85	1.08	0.82
7.	Boots Co. (I) Ltd.	Nil	Nil	Nil	2.30	2.13	2.34
8.	Burroughs Wellcome & Co.	0.43	0.42	0.33	n.a.	n.a.	n.a.
9.	Carter Wallace & Co. Ltd.	0.40	0.40	0.30	n.a.	n.a.	n.a.
10.	C.E. Fulford	0.30	0.25	0.45	n.a.	n.a.	n.a.
11.	Ciba-Geigy Ltd.	7.00	6.70	6.80	3.14	3.27	2.67
12.	Cooper Labs. Ltd.	Nil	Nil	Nil	n.a.	n.a.	n.a.
13.	Cynamid (I) Ltd.	0.75	0.82	0.84	0.57	2.13	1.23
14.	Curewell (I) Ltd.	0.50	0.75	0.84	n.a.	n.a.	n.a.

(Contd.)

TABLE 3.7 (*Contd.*)

1	*2*	*3*	*4*	*5*	*6*	*7*
15. Ethnor Ltd.	2.60	2.59	1.85	n.a.	n.a.	n.a.
16. E. Merck (I) Ltd.	0.51	0.80	0.55	0.88	0.70	0.11
17. Geoffrey Manners Ltd.	1.30	1.00	1.00	n.a	n.a.	n.a.
18. Glaxo Labs. (I) Ltd.	3.00	3.00	3.00	2.17	1.94	2.29
19. G.W. Carnirick	Nil	Nil	Nil	n.a.	n.a.	n.a.
20. Hoechst Pharm. Ltd.	3.90	4.40	3.10	3.10	3.80	3.60
21. India Schering Ltd.	2.45	2.11	1.65	n.a.	n.a.	n.a.
22. John Wyeth	0.52	0.49	0.37	n.a.	n.a.	n.a.
23. Johnson & Johnson	0.80	1.00	1.00	n.a.	n.a.	n.a.
24. May & Baker Ltd.	6.47	6.41	6.35	0.54	0.85	3.19
25. Merck Sharp & Dohme of I. Ltd.	0.72	0.80	0.90	n.a.	n.a.	n.a.
26. Nicholas of I. Ltd.	Nil	Nil	Nil	1.40	1.90	1.51
27. Organon (I) Ltd.	1.00	1.00	1.70	2.12	2.24	1.13
28. Parke Davis Ltd.	0.06	0.07	0.10	0.51	0.40	0.42
29. Pfizer Ltd.	2.00	2.00	2.00	0.48	0.46	0.47
30. Richardson Hindustan Ltd.	0.40	0.37	0.40	1.10	1.10	1.43
31. Roche Products Ltd.	0.55	0.45	0.50	n.a.	n.a.	n.a.
32. Roussel Pharm.	0.80	1.10	0.80	0.75	0.80	1.27
33. Sandoz (I) Ltd.	2.20	3.00	1.40	1.14	1.39	1.51
34. Searle (I) Ltd.	3.00	3.00	3.00	3.59	3.30	2.83
35. Smith Kline and French (I) Ltd.	0.40	0.60	0.70	4.79	3.90	3.61
36. Synbiotics Ltd.	1.00	0.60	1.00	0.98	0.83	0.64
37. Suhrid Geigy Ltd.	0.21	0.23	0.63	n.a.	n.a.	n.a.
38. US Vitamins & Pharm. Ltd.	0.30	0.60	1.30	n.a.	n.a.	n.a.
39. Warner Hindustan Ltd.	1.50	1.40	1.20	0.73	0.59	0.93
40. Whiffens (I) Ltd.	1.00	Nil	3.00	n.a.	n.a.	n.a.
41. Wyeth Labs. Ltd.	4.95	4.71	4.13	3.30	3.71	3.79
42. Wander Ltd.	Neg.	Neg.	Neg.	n.a.	n.a.	n.a.
Average	1.34	1.17	1.16	1.64	1.74	1.71

Sources : (a) Lok Sabha Debates, January 1975, (b) Organisation of Pharmaceutical Producers of India (OPPI), Directory of Members, 1981.

document which spelt out that :[20]

(i) The public sector should set an example in respect of R & D activities by setting aside a suitable percentage of their net sales turnover therefor.

(ii) Foreign companies whose turnover in drug exceeds Rs. 5 crores per annum, shall be obliged to :

(a) have R & D facilities within the country on which capital investment should be at least 20 per cent of their net block, and

(b) spend at least 4 per cent of their sales turnover as recurring expenditure on R & D facilities.

(iii) The gross profit beyond 8 to 13 per cent as specified in the pricing policy shall be funded separately for such purposes including R & D, as may be specified by the government.

(iv) New/original bulk drugs developed through indigenous R & D would be free from price control for a period of five years. The condition for supplying a part of the production to non-associated formulators would also not apply to such cases.

In addition to the foregoing measures envisaged by the government to boost R & D efforts in the country, the following are also suggested :

(1) Detailed information should be obtained from all the relevant private and public sector units regarding their present and future plans of R & D projects.

(2) This information should be carefully processed (a) to avoid any duplication, and (b) to ascertain the extent of efforts being made towards R & D of drugs for tropical infectious diseases.

(3) Special directives, facilities, and/or financial aid should be given to the deserving units to undertake certain research projects of national importance.

(4) A close account should be maintained of the development of various research projects undergoing in different private and public laboratories. For this a six-monthly report should be obtained from the concerned units and assessed.

(5) Finally, a proper coordination between the research projects of public, private and university research departments should be maintained.

All the above-mentioned strategies should be planned and executed from under one roof, such as the Department of Science

and Technology. The efforts may involve extra costs but the same should be viewed in the light of likely gains from such efforts.

Production of Drugs

The production of drugs in India has registered a steady growth since 1947 when the total production of drugs was a mere Rs. 10

TABLE 3.8

Production of Formulations at Current and Constant (1961-62) Prices : 1947-48 to 1978-79

(*Rs. in crores*)

Year	*Production*		*Real annual growth rates*
	Current prices	*1961-62 prices*	
1947-48	10	11	—
1951-52	35	40	65.91
1955-56	50	56	10.00
1960-61	80	80	10.71
1961-62	100	100	25.00
1962-63	120	118	18.00
1963-64	135	131	11.02
1964-65	155	150	14.50
1965-66	175	166	10.67
1966-67	190	169	1.81
1967-68	200	164	−2.96
1968-69	235	190	15.85
1969-70	250	193	1.58
1970-71	300	210	8.81
1971-72	360	248	18.10
1972-73	380	258	4.03
1973-74	408	275	6.59
1974-75	448	349	26.91
1975-76	560	399	14.33
1976-77	700	472	18.30
1977-78	900	556	17.80
1978-79	1050	640	15.11
1982-83*	1875	1143	19.65

* Projections by the working group on drugs and pharmaceuticals. (Set up by the Planning Commission in 1978).

Sources: (1) CSO, *Statistical Abstracts*, (2) OPPI, *Directory of Members*, 1981, and (3) Ministry of Petroleum, Chemicals & Fertilisers, *Indian Drugs Statistics*, 1980.

crores. The data pertaining to the production of drugs appear in Table 3.8. The table shows that the production of drugs in real terms has increased steadily from Rs. 11 crores in 1947-48 to Rs. 640 crores in 1978-79. The annual growth rates appearing in Column 4 show that the highest annual growth rate of 65.91 per cent occurred during the initial years of the industry's growth, i.e., 1947-48 to 1951-52. But this is primarily because of the low base. However, the growth rates in the later years have also been in most cases in two digits. The real annual average growth rate for the industry for the period 1960-61 to 1978-79 works out to be around 12.49 per cent. The average annual growth rate for the period 1970-75 which works out to be 12.85 per cent is comparable with the growth rate of production of drugs during the similar period of many developed countries (which though have a much larger production base) such as Japan (13.5 per cent), Sweden (13.3 per cent), FRG (11.6 per cent), France (11.2 per cent) and the USA (10.6 per cent).

The data on production of drugs in Table 3.8 pertain to formulations only. Separate data pertaining to the production of bulk drugs is not available for all the years. The available data have been put together in Table 3.9. This table shows that in real terms the production of bulk drugs has registered a steady rise from Rs. 17.12 crores in 1965-66 to Rs. 103.20 crores in 1978-79, depicting an average annual rise of 17.87 per cent.

TABLE 3.9

Production of Bulk Drugs at Current and Constant (1961-62) Prices

(*Rs. in crores*)

Year	*Current prices*	*1961-62 prices*	*Real annual growth rates* (%)
1965-66	18	17.12	—
1973-74	66	44.48	19.98
1975-76	130	73.06	32.13
1976-77	150	78.60	7.58
1977-78	164	84.46	7.46
1978-79	200	103.20	22.19

Source : As for Table 3.8.

A breakdown of production of bulk drugs in ten main groupings shows that in the real production worth Rs. 103.20 crores in 1978-79, antibiotics ingredients had a share of Rs. 31.48 crores (30.5 per cent), analgesics/antipyretics/anti-rheumatics Rs. 12.38 crores (12 per cent), vitamins Rs. 10.84 crores (10.5 per cent), sulfonamides Rs. 9.29 crores (9 per cent), anti-T.B. drugs Rs. 4.64 crores (4.5 per cent), corticosteroids and sex harmones Rs. 4.95 crores (4.8 per cent), anti-amoebics Rs. 3.10 crores (3 per cent), antibacterials Rs. 2.06 crores (2 per cent), anti-diabetics Rs. 1.55 crores (1.5 per cent), and the rest Rs. 22.91 crores (22.2 per cent).[21] Thus the first three categories of bulk drugs account for 53 per cent of the total production of bulk drugs in the country.

The sectoral distribution of production of formulations and bulk drugs appears in Table 3.10. The table shows that out of the total production of formulations worth Rs. 1050 crores in 1978-79, the foreign sector accounted for the highest share—44 per cent (Rs. 460 crores), followed by the Indian sector, 32 per cent (Rs. 340 crores), small-scale sector, 18 per cent (Rs. 190 crores) and the public sector 6 per cent (Rs. 60 crores). Comparable figures for the year 1976-77 show that the respective shares of these sectors have not undergone any major changes in the recent past. But by 1982-83 the Indian sector is expected to lead the production of formulations with a 37 per cent (Rs. 700 crores) share, followed by foreign sector, 31 per cent (Rs. 575 crores), small-scale sector, 19 per cent (Rs. 350 crores) and the public sector, 13 per cent (Rs. 250 crores). As regards the production of bulk drugs, the figures for 1976-77 show that out of Rs. 150 crores worth of bulk drugs produced in that year, the foreign sector had the highest share—42 per cent (Rs. 63 crores), followed by public sector, 33 per cent (Rs. 49 crores), Indian sector, 19 per cent (Rs. 28 crores), and small-scale sector, 7 per cent (Rs. 10 crores). The shares of these sectors in the total production of bulk drugs worth Rs. 200 crores in 1978-79 were : foreign sector, 28 per cent (Rs. 56 crores), public sector, 25 per cent (Rs. 49 crores), Indian sector, 38 per cent (Rs. 75 crores) and small-scale sector, 10 per cent (Rs. 20 crores). It is thus evident that in two years the share of the Indian sector in the production of bulk drugs has doubled, from 19 per cent to 38 per cent, that of foreign sector and public sector has declined by 14 per cent (42 per cent to 28 per cent) and 8 per cent (33 per cent to 25 per cent)

TABLE 3.10

Sectoral Distribution of Production of Formulations and Bulk Drugs

(Rs. crores : Current Prices)

Particulars	*1973-74*		*1976-77*		*1978-79*		*1982-83**	
	Amount	*Percentage*	*Amount*	*Percentage*	*Amount*	*Percentage*	*Amount*	*Percentage*
Formulations								
Public Sector	28	6.9	47	6.7	60	5.7	250	13.3
Indian Sector	160	39.3	241	34.4	340	32.4	700	37.3
Foreign Sector	220	53.9	292	41.7	460	43.8	575	30.7
Small-Scale Sector	—	—	120	17.2	190	18.1	350	18.7
	408	100.0	700	100.0	1,050	100.0	1,875	100.0
Bulk Drugs								
Public Sector	18	27.3	49	32.7	49	24.5	—	—
Indian Sector	11	16.7	28	18.7	75	37.5	—	—
Foreign Sector	37	56.0	63	42.0	56	28.0	—	—
Small-Scale Sector	—	—	10	6.6	20	10.0	—	—
	66	100.0	150	100.0	200	100.0	475**	100.0

Note : The sources do not report any figures for the small-scale sector in 1973-74. We treat them as negligible.

* Projections by the working group on Drugs and Pharmaceuticals (set up by the Planning Commission in 1978).

** Component break-up not available.

Sources : (1) Ministry of Petroleum, Chemicals and Fertiliser, GOI, *Indian Drugs Statistics*, 1979-80 and Report of the Committee on Drugs and Pharmaceuticals, 1975. (2) OPPI, *Annual Report*, 1979.

respectively and that of the small sector has increased by 3 percentage points (7 per cent to 10 per cent). The reason behind all these changes could be that since the production of formulations fetches higher rates of return on investment, the foreign sector has slowly shifted out of the production of bulk drugs, leaving scope for Indian firms to increase their production and capture a larger share of the bulk drug market. If this is true it could mean that the role of many an Indian firm is being increasingly reduced to mere suppliers of bulk drugs to foreign firms.

Capacity Utilisation

The analysis of capacity utilisation data highlights several features connected with the production pattern of drugs in the country. On the one hand, we notice a vast underutilisation of capacity of certain drugs and on the other hand many drugs are being produced much in excess of their authorised capacity. We first examine the extent of capacity utilisation of seven essential drugs during the eight year period, 1970-77. These drugs are : Penicillin, Streptomycin, Sulpha drugs, Chloramphenicol, PAS and its salts, Anti-dysentry drugs and Vitamin A. The relevant data appear in Table 3.11 (also in Figure 3.2). The table shows that whereas, the production of penicillin, streptomycin, chloramphenicol and vitamin A has increased with a rise in their capacities, the actual production of the remaining drugs appearing in the table has not kept pace with the increased capacity allowed for their production. As a result, the per cent capacity utilisation of these drugs has declined over the years. Thus, for instance, whereas the total capacity for anti-dysentry drugs increased from 64.5 tonnes in 1970 to 724 tonnes in 1977, its production during this period increased from 78 tonnes to 143 tonnes only, as a result the per cent capacity utilisation shows a fall from 121 per cent in 1970 to a paltry 20 per cent in 1977. Other drugs whose capacity utilisation during the period 1970-77 declined on the lines of anti-dysentry drugs are : PAS and its salts (124 per cent to 48 per cent) and sulpha drugs (80 per cent to 45 per cent). The reason behind this fall in capacity utilisation could be many—the shortage of raw materials, the fall in demand, lower rate of returns on these drugs or may be (as seems the case here) the capacity for the production of these drugs is far in excess of what

TABLE 3.11

Capacity Utilisation of Seven Essential Categories of Drugs : 1970-77

Sr. No.		*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1.	**Penicillin**								
	Capacity (MMU)	264.0	264.0	299.0	331.0	364.0	364.0	364.0	364.0
	Utilisation	182.0	223.0	230.2	246.0	254.0	236.0	259.0	312.0
	Per cent utilisation	69	84	77	74	70	65	71	86
2.	**Streptomycin**								
	Capacity (Tonnes)	235.2	235.2	205.2	268.8	257.0	257.0	257.0	257.0
	Utilisation	157.2	177.6	193.2	177.6	187.0	192.0	214.0	194.0
	Per cent utilisation	67	76	94	66	73	75	83	75
3.	**Sulpha Drugs**								
	Capacity (lakh kg.)	9.8	10.2	14.0	14.0	21.0	21.0	25.9	25.9
	Utilisation	7.8	10.1	12.6	12.6	9.7	10.6	12.3	11.6
	Per cent utilisation	80	99	90	90	46	50	47	45
4.	**Chloramphenicol**								
	Capacity (Tonnes)	68.4	68.4	68.4	70.8	109.0	109.0	128.0	128.0
	Production	38.4	48.0	40.8	48.0	59.0	60.0	102.0	93.0
	Per cent utilisation	56	70	60	68	54	55	80	73
5.	**PAS & Its Salts**								
	Capacity (Lakh kg.)	3.8	5.4	7.2	7.3	7.8	7.8	11.1	11.7
	Production	4.7	4.8	4.5	5.0	4.6	5.5	7.0	5.6
	Per cent utilisation	124	89	63	68	59	68	63	48
6.	**Anti-dysentry Drugs**								
	Capacity (Tonnes)	64.5	64.5	124.7	136.4	427.0	427.0	509.0	724.0
	Production	78.0	83.0	83.6	87.6	168.0	175.0	205.0	143.0
	Per cent utilisation	121	129	67	64	39	41	40	20
7.	**Vitamin A**								
	Capacity (MMU)	25.0	25.0	64.2	66.6	45.0	45.0	45.0	45.0
	Utilisation	37.0	42.2	49.2	48.4	46.0	29.0	42.0	48.0
	Per cent utilisation	148	169	77	73	102	64	93	107

Source : Centre for Monitoring Indian Economy (CMIE) : Production and Capacity Utilisation in 215 industries, 1970-77, pp. 57-58.

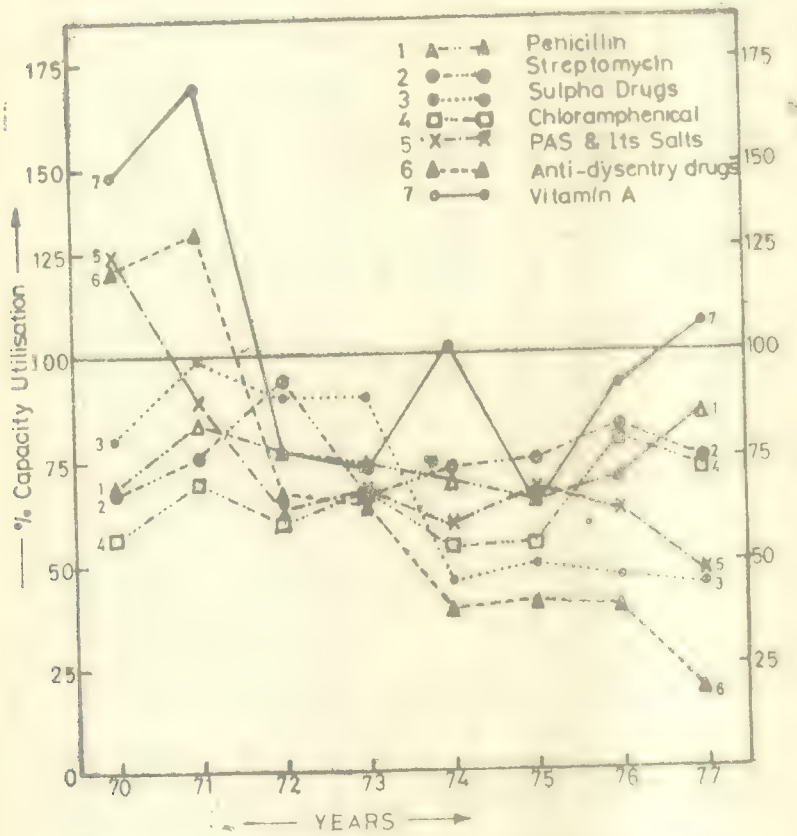


Fig. 3.2. : Per cent capacity utilisation of seven essential categories of drugs : 1970-77.

the firms can absorb in normal operating conditions. By 'normal operating conditions' is meant the number of shifts normally worked, normal period of time for repairs etc. Obviously the capacity based on this definition would be less than the technical capacity. To the extent the institutional factors like fewer number of shifts worked etc., affect, under these circumstances production is not expected to level with installed capacity or to exceed it. However, the fact that fresh capacities were applied by companies and the authorities have sanctioned such requests, persistence of unutilised capacity over a longer period can hardly be explained fully in terms of shortages or lack of demand. Likelihood of a possibility where existing companies would have created excess

capacities to begin with, so that the potential new entrant would be discouraged, needs to be scrutinised. It needs to be pointed out that a detailed breakdown on capacity utilisation of individual units would be even more revealing. Since a given product is manufactured by different companies under different number of shifts and circumstances, there would be units producing much less, equal to or greater than their actual capacity within the group.

The problem faced by the drug industry in India is not always that of underutilisation of capacity. The firms engaged in this industry have very often been found producing much more in excess of authorised capacity. Table 3.12 (in the appendix) lists the excess production of several such drugs during the three-year period 1974-76 by thirteen leading foreign companies. Figures in brackets below the main columns 9 to 11 in the table depict the percentage of excess production over the permissible capacity. This excess production, as can be seen, ranges anywhere from 2 per cent (Bayer's Mesulphen) to 1691 per cent (Suhrid's Desponil). In most cases the excess production amounts to 50 per cent of the permitted capacity. However, in purely economic terms, if this excess production has occurred through the optimum use of existing plant capacity without any additional capital investment having taken place and if this excess production has substituted imports, then not only the firms have geared themselves to efficiency but have also helped to conserve foreign exchange, which would otherwise have been used to import such drugs. The only consideration then should be to see, among other things, if this excess production of drugs is not being substituted for other essential drugs and/or if this unauthorised production is not affecting the interest of units in the small-scale sector, especially in cases where these units are competing with the companies in the large-scale sector. From time to time this excess capacity of firms is regularised by the government. It is not as yet known if this regularisation has in any way affected the interests of small-scale units. The excess capacity should be regularised only in cases where the interests of small-scale units are not affected or in cases where the excess production is exclusively for export purposes or to meet the increased internal demand.

The foregoing discussion highlights the fact that both the production and capacity utilisation have steadily risen in the past

to meet an increasing demand for drugs in the country. Although it is difficult to generalise, the trends in the discussion do suggest that the increase in output has come about through both—the utilisation of existing capacity and also by way of creation of additional capacity in the industry.

Concentration in Production

Before we proceed further, it would be proper at this point to discuss certain features relating to concentration in production of drugs in the country. In our earlier section on the structure of the industry, we noted that the pharmaceutical industry in India is characterised by about 120 large sized Indian and foreign units and over 2300, mainly Indian, small-scale units. Despite this large number of firms operating in the industry, the market for pharmaceuticals is dominated by some thirty leading companies. Table 3.13 shows the market share of drug sales for these companies in 1976. It can be seen from this table that the first 10 leading companies have 39 per cent of total market share of drugs. The share of the next 10 companies is 19 per cent and that of the following 10 companies is 14 per cent. Thus, these 30 companies in themselves hold over 70 per cent of the market share for drugs. Out of these 30 companies, 19 are foreign with market share of 45 per cent and the remaining 11 are Indian, with market share of 25 per cent. The remaining 30 per cent of market share is held by hundreds of other drug companies, mainly from the small-scale sector. Another feature related to the Indian drug market is that around 70 per cent of the market sales is composed of 10 therapeutic groups. These are : antibiotics (20 per cent share), vitamins, tonics and health restorers (17 per cent), cough and cold preparations (6 per cent), haematinics (5 per cent), hormones (5 per cent), dermatological preparations (4 per cent), analgesics (4 per cent), anti-rheumatics (3 per cent), anti-diarrhoeals (3 per cent) and dietetics (3 per cent).[2]

In the last chapter we had examined the nature of the pharmaceutical industry. We had pointed out that the fact that a small number of companies account for a large portion of the industry's sales and that this limited number produces the same basic drugs is indicative of the oligopolistic nature of the industry. However, we had also discussed the concept of sub-markets therein and had cited an example with Indian data to show that there could also

TABLE 3.13

Market Share of Drug Sales of 30 Leading Companies in India in 1976

Sr. No.	*Rank*	*Name of the company*	*Market share (%)*
1.	1	Sarabhai	7.1
2.	2	Glaxo	6.2
3.	3	Pfizer	5.9
4.	4	Alembic	4.2
5.	5	Hoechst	3.6
6.	6	Lederle	2.5
7.	7	Parke Davis	2.3
8.	—	Abbot	2.3
9.	—	Ciba-Geigy	2.3
10.	8	Sandoz	2.2
11.	9	Burroughs Wellcome	2.1
12.	10	Boots	2.0
13.	—	Suhrid	2.0
14.	11	Unichem	1.9
15.	—	E. Merck	1.9
16.	—	John Wyeth	1.9
17.	11	M & B	1.9
18.	12	S.K.F.	1.6
19.	—	Dey's	1.6
20.	—	German Remedies	1.6
21.	—	M.S.D.	1.6
22.	—	Roche	1.6
23.	—	Warner Hindustan	1.6
24.	13	East India	1.5
25.	14	T.C.F.	1.4
26.	—	I.D.P.L	1.4
27.	15	Himdays	1.3
28.	—	Raptakos	1.3
29.	16	Ranbaxy	1.2
30.	17	Boehringer Knoll	1.1

(1) Share of first 10 companies : 38.6 per cent
(2) Share of first 20 companies : 57.1 per cent
(3) Share of all the 30 companies : 71.1 per cent

Source : S.B. Kolte, Prices and Profits in Pharmaceutical Industry, Ph.D. thesis, Poona University, 1977.

exist monopolistic features within the sub-markets. As a result, the industry can only loosely be described as oligopolistic with leading firms possessing substantial market power. This phenomenon is however not typical to India only. The pharmaceutical industry in other countries also bears this feature.

We had also pointed out in the last chapter that a large proportion of drug MNCs total sales is generated abroad through their affiliates. An attempt was made to examine the share of the Indian market in the total foreign sales of 12 leading international drug companies. The results are summed up in table 3.14. This table shows that companies like Glaxo, Cynamid and Richardson Hindustan generate more than 10 per cent of their foreign sales in India. Out of 12 companies listed in the table, Glaxo, the UK transnational, generates 61.40 per cent of its total sales abroad, out of which the share of Indian market is as high as 17.19 per cent. Likewise the US transnationals Cynamid and Richardson Hindustan generate respectively 34 per cent and 48.40 per cent of their total sales abroad in which the share of Indian market stands as high as 13.25 per cent and 11.01 per cent, respectively. Similarly, the importance of Indian market for other US transnationals—Pfizer and Parke Davis—can also be noticed in the table. However, the table also depicts a relatively lower place of Indian market in the generation of foreign sales of some non-US firms. Thus for instance, Roche, a Swiss transnational, generates 90 per cent of its total sales abroad, in which the share of Indian market is only 1.30 per cent. However, the average share of Indian market in the total foreign sales of all the 12 drug MNCs listed in Table 3.14 works out to be relatively high, 5 per cent, signifying the importance of the Indian market for these companies.

Employment

An examination of the available statistics reveals several interesting features associated with the employment in the industry. In the following paragraphs, we first examine the absolute rise in employment in the industry followed by a study of occupational structure, skill intensity and the total emoluments drawn by high salaried class engaged in various pharmaceutical firms.

Table 3.15 shows the position regarding employment in the industry at two points of time, 1952 and 1978. The table shows

that the direct employment during this period has risen nearly four-fold, from 32,000 to 1,50,000, depicting an average annual

TABLE 3.14

India's Share in the Total Foreign Sales of 12 Drug Transnationals in 1977

(*Millions of dollars*)

Sr. No.	*Company*	*Domicile*	*Total sales*	*Foreign sales*	*5 as % of 4*	*Sales in India*	*7 as % of 5*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1.	Cynamid	USA	484.0	164.56	34.00	21.80	13.25
2.	German Remedies	FRG	734.6	506.87	69.00	11.69	2.31
3.	Glaxo	UK	594.3	364.90	61.40	62.71	17.19
4.	Hoechst	FRG	1572.9	1053.84	67.00	35.27	3.35
5.	Organon	NLD	441.5	387.20	87.70	6.20	1.60
6.	Parke Davis	USA	1024.8	443.74	43.30	28.37	6.39
7.	Pfizer	USA	1016.0	518.16	51.00	42.23	8.15
8.	Richardson Hindustan	USA	234.8	113.64	48.40	12.51	11.01
9.	Roche	SWI	1145.0	1030.50	90.00	13.74	1.30
10.	Sandoz	SWI	934.8	888.06	95.00	34.65	3.90
11.	Synbiotics	USA	668.4	220.57	33.00	6.89	3.12
12.	Wyeth Labs	USA	1116.0	348.19	31.20	6.29	1.81
	Total		9967.1	6040.23	59.25	282.35	4.67

Notes: (1) The sales figures of Glaxo, Parke Davis and Sandoz include respectively the sales of Biological Evans, Warner Hindustan and Wander Ltd. These three latter companies are also the respective subsidiaries of parents of first three companies.

(2) The conversion of rupee to dollar is done @ Rs. 8.00 per dollar.

Sources: (1) UN, CTC, MNCs and the pharmaceutical industry, Annex. I, Table 4, and (2) Company annual reports.

TABLE 3.15

Direct and Indirect Employment in the Pharmaceutical Industry

Particulars	*1952*	*1978*
Direct Employment		
Large-scale sector	22,000	1,00,000
Small-scale sector	10,000	50,000
Total	32,000	1,50,000
Indirect Employment		
Distribution & trade	N.A.	5,00,000
Ancillary industries	N.A.	2,00,000
Grand Total	32,000	8,50,000

Source : Ministry of Labour, Report on Survey on Employment in Drugs & Pharmaceutical Industry, 1975 ; OPPI *Annual Report*, 1979, and *Directory of Members*, 1981.

rise of 14 per cent. The share of the large-scale sector in the total direct employment of 1,50,000 in 1978 is placed at 1,00,000 (67 per cent) and that of the small-scale sector at 50,000 (33 per cent). Available data on indirect employment for 1978 show that the industry provides indirect employment to the extent of 7,00,000. Out of this 5,00,000 (71 per cent) is in distribution and trade and 2,00,000 (29 per cent) is in ancillary industries. Thus the total direct and indirect employment in the industry stands around 8,50,000. About 90 per cent of this total employment is concentrated in the following five States : Maharashtra (52 per cent), West Bengal (12 per cent), Gujarat (10 per cent), Andhra Pradesh (9 per cent) and UP (7 per cent).

Occupational Structure and the Skill Intensity

An examination of the data on 654 large and small pharmaceutical units by the Directorate General of Employment and Training (DGET) revealed that there are as many as 250 occupations in the industry. Their grouping under eight main headings appears in Table 3.16. The table shows that crafts, production process workers and labourers constitute the highest proportion

of labour force—around 60 per cent of the total—followed by those employed in clerical and related jobs, 14.5 per cent, and in professional technical and related professions, 10.2 per cent. Thus 85 per cent of the employment in the industry is accounted for by

TABLE 3.16

Distribution of Employees by Occupational Divisions in 654 Pharmaceutical Units

Sr. No.	*Occupational division*	*1969*		*1973*		*Average annual per cent increase*
		No. of employees	*Per cent to total*	*No. of employees*	*Per cent to total*	
1.	Professional, technical and related workers	4,914	9.8	7,068	10.2	10.96
2.	Administrative, executive and managerial workers	1,855	3.7	2,606	3.8	10.12
3.	Clerical and related workers	7,570	15.1	10,048	14.5	8.18
4.	Sales workers	3,491	7.0	5,257	7.6	12.65
5.	Farmers, fishermen and related workers	292	0.6	340	0.5	4.11
6.	Workers in transport and communication occupations	382	0.8	501	0.7	7.79
7.	Crafts, production process workers and labourers not elsewhere classified	30,422	60.9	41,952	60.5	9.48
8.	Service, sports and recreation workers	1,053	2.1	1,499	2.2	10.59
	Total	49,979	100.0	69,271	100.0	9.65

Source : DGET, Ministry of Labour, Report on the Survey on Employment in Drugs and Pharmaceutical Industry, 1975, Table 8, p. 15.

employees under these three categories of professions, the balance 15 per cent being filled by sales workers (7.6 per cent), administrative, executive and managerial staff (3.8 per cent), service, sports and recreation workers (2.2 per cent), and workers in transport and communications occupations (0.7 per cent). Annual percentage increase over the period 1969 to 1973 shows that the sales workers registered the highest average annual increase of 12.65 per cent. Other categories of labour which registered a relatively higher average annual percentage rise over the four years 1969-73 are : professional, technical and related, workers (10.96 per cent) ; service, sports and recreation workers (10.59 per cent) ; and administrative, executive and managerial workers (10.12 per cent). Aggregate data for all the categories of workers show that the total employment in these units increased by an average annual rate of 9.65 per cent. An important noteworthy feature of Table 3.16 is that the composition of labour force as between skilled and unskilled has not undergone any major changes between 1969 and 1973. Using the data in Table 3.16 as the base, we calculated a rough skill intensity index (SI) with the help of the following method.

$$SI = \frac{A + T}{N}, \text{ where}$$

A=Number of employees with academic degrees

T=Number of technicians

N=Total Number of employees

In 'A' and 'T' we included employees under serial numbers (1) to (3) and (7). The resultant skill intensity index for both the years, 1969 and 1973, worked out to be as high as 0.89. This high measure of skill intensity, however, should come as no surprise in view of the skill-intensive nature of the pharmaceutical industry. But it should be noted that this is an aggregate index and hence does not give any idea of inter-unit differences in skill intensity.

Remuneration of Employees

Table 4.4 in Chapter 4 shows the breakdown of production expenditure of 52 pharmaceutical firms for three years, 1975-76 to 1977-78. The table shows, among other things, that the remuneration of employees constitutes around 17 per cent of the total cost of drugs. This comparatively high percentage of wage bills to

total production expenditure is owing to, as we have just now mentioned, the skill-intensive nature of the industry. The personnel employed draw large salaries, depending on the nature of their work and/or qualifications. A feature related with the remuneration to employees in the pharmaceutical industry is that a large percentage of it is accounted for by high salaries personnel, i.e., by employees drawing Rs. 36,000 per annum or more. The amendment in company law in 1975 has made it possible for the first time to calculate the exact share of this high-salaried class in the total wage bill of the drug companies. The amendment made it compulsory on the part of the companies to disclose, *inter alia*, in their annual accounts, the number and total remuneration of personnel drawing Rs. 36,000 per annum or more, employed either full time or part time during the year. Data in Table 4.4 indicate that employees in this high-salaried class account for around 10 per cent of total wage bill of pharmaceutical companies. More detailed data for our three groups of drug companies for the period 1975-76 to 1977-78 appear in Table 3.17. This table shows that over the three years there has been a consistent rise in the total numbers and emoluments of personnel in the high salaried class in the case of all the three groups. The annual average for these three years shows that the larger companies in Group III have the highest number, 888 of this high-salaried personnel on their payroll accounting for 12 per cent (Rs. 408 lakhs) of the total wage bill. The second group had the second highest number of such personnel, 224, on their payroll accounting for 10 per cent (Rs. 120 lakhs) of the total wage bill. They were followed by the third group which had 134 such personnel accounting for 8 per cent (Rs. 64 lakhs) of the total wage bill. Annual average for three years, 1975-76 to 1977-78, shows that high-salaried employees in Group II companies draw on an average the highest total emoluments, Rs. 54,000 per annum, followed by employees in Group I and Group III companies which draw respectively Rs. 47,000 and Rs. 46,000 worth of total emoluments per annum. The three years' annual average for all the three Groups combined show that around 11 per cent of the total wage bill of foreign drug companies go to the high-salaried personnel in the bracket of Rs. 36,000 per annum or more, each on average drawing Rs. 48,000 per annum.

A survey[23] of 92 top executives engaged in production and

TABLE 3.17

Total Emoluments of Personnel Drawing Rs. 36,000 per Annum or more Employed Full or Part Time During the Year and their Share in Total Wage Bill

(Rs. in lakhs)

Particulars	*1975-76*	*1976-77*	*1977-78*	*Annual average 1975-76 to 1977-79*
Group I (Small)				
1. No of employees	117	142	143	134
2. Total remuneration	55.38	64.32	70.76	63.49
3. Average per employee 2÷1	0.47	0.45	0.49	0.47
4. 2 as % of total wage bill	7.66	7.97	8.03	7.89
Group II (Medium)				
1. No. of employees	182	234	257	224
2. Total remuneration	96.84	130.03	133.21	120.03
3. Average per employee 2÷1	0.53	0.56	0.52	0.54
4. 2 as % of total wage bill	9.71	12.06	8.72	10.16
Group III (Large)				
1. No. of employees	673	756	1,235	888
2. Total remuneration	309.79	356.12	557.10	407.67
3. Average per employee 2÷1	0.46	0.47	0.45	0.46
4. 2 as % of total wage bill	10.31	10.84	15.89	12.35
Group I—III				
1. No. of employees	972	1,132	1,635	1.246
2. Total remuneration	462.01	550.47	761.07	591.18
3. Average per employee 2÷1	0.48	0.49	0.47	0.48
4. 2 as % of total wage bill	9.78	10.64	12.86	11.09

quality control in 17 leading companies showed that in 1975-76 a senior executive dealing with production was drawing Rs. 64,227 per annum, against Rs. 63,674 drawn by a scientist in R & D, Rs. 61,871 by a professional manager and Rs. 51,869 by a sales executive. The survey also revealed that the doctorates were the highest beneficiaries, drawing on average Rs. 72,766 per annum against Rs. 53,329 by a post-graduate in science and Rs. 64,328 in accountancy profession. It should be pointed out that too high a structure of remuneration is a matter of social concern since the industry may end up in creating high-wage islands.

An interesting observation made in the survey was that around 50 per cent of the doctorates employed by pharmaceutical companies were foreign-returned and they were drawing higher remuneration than the local doctorates, even in cases where the qualifications and experience were the same. The survey concluded that the employment potential in the pharmaceutical sector suggests a large scope to absorb immigrant talent. But it seems that the companies are content with attracting talent from fellow units by offering higher emoluments. For, it was found that the top cadres of smaller companies are filled up by trained cadre from larger units. It was also observed in the survey that by offering high remuneration, the foreign sector has effectively attracted talent and knowhow from the national sector.[24] This free mobility of skilled personnel from one unit to another is attributed to shortage of well-qualified and trained personnel and job hazards associated with management.

Capital Investment

Proper statistics relating to capital investment in the pharmaceutical industry could not be had from any source. The available statistics with certain estimates and adjustments have been put together in Table 3.18. This table shows that in real terms the capital investment in the industry has risen steadily from Rs. 32 crores in 1952 to Rs. 135 crores in 1970 and further to Rs. 180 crores in 1978. Thus in the last two and a half decades the total capital investment in the industry has registered an average annual rise of 10.75 per cent. The table shows a negative figure for capital investment for 1971 and 1972 and only a marginal rise in 1973 and 1974. This fall in investment is attributed to stringent Drug Price Control Order (DPCO) of 1970 which

restricted the rates of return on total capital employed by drug companies. DPCO is discussed in detail in the next chapter.

The sectoral breakdown of capital investment is available only for the year 1977. This breakdown shows that in the total real capital investment of Rs. 166 crores in that year, the foreign sector had a share of Rs. 71 crores (43 per cent), public sector, Rs. 55 crores (33 per cent) and Indian sector, Rs. 40 crores (24 per cent).[25]

Estimates for the period 1977-79 to 1982-83 by the working group on drugs and pharmaceuticals show that an additional investment of Rs. 250 crores (Rs. 150 crores in public sector and

TABLE 3.18

Capital Investment in the Pharmaceutical Industry

(Rs. in crores)

Year	*Investment*		*Real annual +/-*
	Current prices	*1961-62 prices*	
1952	24	32	—
1962	56	56	7.50
1966	129	109	23.66
1970	183	134	5.73
1971	195	129	—3.73
1972	207	127	—1.55
1973	225	128	0.79
1974	237	123	3.91
1975	252	99	19.51
1976	360	130	31.31
1977	450	166	27.69
1978	470	180	8.44

Notes : The data for the years 1966, 1970, 1972, 1974, 1976, and 1978 are estimates. Investment at current prices has been deflated at 1961-62 prices with a proxy from the wholesale price index of machinery and machine tools.

Sources : (1) OPPI *Annual Report*, 1978, (2) Ministry of Petroleum, Chemicals and Fertilisers, Report of the Working Group on the Drugs and Pharmaceuticals for the Plan Period 1978-79—1983-84, (3) H.L. Chandhok, *Wholesale Price Statistics India*, Vol. I, 1978.

Rs. 100 crores in the private sector) in bulk drugs and Rs. 150 crores in formulations would be needed to achieve the required production targets in these two categories of drugs by 1982-83.

In the preceding sections we examined the growth in production, employment and capital investment in the pharmaceutical industry in India. The analysis of production figures for the period 1970-71 to 1977-78 showed that the production during this period increased (in constant, 1961-62 prices) from Rs. 210 crores to Rs. 556 crores, showing an average annual rise of 24 per cent. A rough estimate of employment figures from Table 3.15 for the period 1970-71 to 1977-78 shows that direct employment in the industry during this period would have increased from 80,640 to 1,50,000, showing an average annual rise of 11 per cent. Capital investment figures for the similar period (at constant, 1961-62 prices) show that the same registered an increase from Rs. 129 crores in 1970 to Rs. 180 crores in 1978, indicating an average annual rise of 6 per cent. This means that production has grown four times as fast as investment and twice as fast as employment, indicating that growth in production has occurred due to a significant increase in out-turn per employee and per unit of capital.

IV. International Trade Transactions in Drugs and Pharmaceuticals

Imports of Drugs and Pharmaceuticals

Table 3.19 (also Figure 3.3) shows: (a) the total imports of drugs and pharmaceuticals both at current and constant (1961-62) prices for the period 1947-48 to 1979-80, (b) the share of foreign drug companies in the total drug imports, and (c) the percentage share of total drug imports to total drug production.

Column 4 shows that in real terms drug imports have steadily risen from Rs. 1.61 crores in 1947-48 to Rs. 14.09 crores in 1969-70 and further to Rs. 37.64 crores in 1979-80. The annual growth rate works out to be 5 per cent for the 60s and 10 per cent for the 70s. The imports of foreign drug companies were around Rs. 5 crores per annum in the 60s and also in the first half of the 70s ; but they increased thereafter and were expected to be around Rs. 16 crores by 1979-80, indicating an average annual rise of 25 per cent for this second half of the 70s. The percentage share of foreign companies in the total import of drugs and pharmaceuticals works out to be around 50 per cent for the

TABLE 3.19

Imports of Drugs and Pharmaceuticals : 1947-48—1979-80

(Rs. in crores)

Year	*Imports (current price)*		*Imports (1961-62 prices)*				*6 as % of 4*	*Production (1961-62 prices)*	*4 as % of 9*
	Total	*Drug MNCs*	*Total*	*Annual +/—*	*Drug MNCs*	*Annual +/—*			
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1947-48	1.46	0.73	1.61	—	0.80	—	49.69	11	14.64
1951-52	0.86	0.43	0.99	7.70	0.50	—7.50	50.51	40	2.48
1955-56	8.82	4.59	9.79	177.78	5.19	187.60	53.01	56	17.48
1960-61	10.95	6.10	10.95	1.97	6.10	2.92	55.71	80	13.69
1961-62	10.71	4.80	10.71	—2.19	4.80	—21.31	44.82	100	10.71
1962-63	9.28	4.90	9.09	—15.13	4.79	Neg.	52.70	118	7.70
1963-64	8.34	3.80	8.09	—11.00	3.69	—22.96	45.61	131	6.18
1964-65	8.21	4.00	7.92	—2.10	3.86	4.61	48.74	150	5.28
1965-66	8.73	4.70	8.30	4.80	4.47	15.80	53.86	166	5.00
1966-67	17.41	6.20	15.49	86.63	5.52	23.49	35.64	169	9.17
1967-68	17.52	6.40	14.40	—7.04	5.26	—4.71	36.53	164	8.78
1968-69	17.50	6.30	14.16	—1.67	5.10	3.04	36.02	190	7.45
1969-70	18.30	6.70	14.09	—0.49	5.16	1.18	36.62	193	7.30
1970-71	24.30	8.00	17.03	20.87	5.61	8.72	32.94	210	8.11
1971-72	26.60	8.50	18.33	7.63	5.86	4.46	31.97	248	7.39
1972-73	23.20	9.15	15.78	—13.91	6.22	6.14	39.42	258	6.12
1973-74	26.40	7.47	17.79	12.74	5.03	—19.13	28.27	275	6.47
1974-75	34.20	8.50	21.31	19.79	5.30	5.37	24.87	349	6.11
1975-76	36.20	11.88	20.34	—4.55	6.68	26.04	32.84	399	5.10
1976-77	38.73	14.36	20.29	—0.25	7.52	12.57	37.06	472	4.30
1977-78	57.73	19.22	29.73	46.53	9.90	31.65	33.30	556	5.35
1978-79	62.73	24.99	32.37	8.88	12.89	30.20	39.82	640	5.06
1979-80	75.28	32.49	37.64	16.28	16.25	26.07	43.17	725	5.19

Notes : Data of imports by drug MNCs for the period 1947-48 to 1955-56, 1971-72 and 1978-79 to 1979-80 are estimates ; data for the period 1960-61 to 1970-71 are for 32 companies (20 majority and 12 minority foreign equity holding subsidiaries) ; data for the period 1972-73 to 1974-75 are of UK and US based companies only ; data for the period 1975-76 to 1977-78 are for our sample of 27 companies only, data for these three years are on account of imports of raw materials and components only.

In the absence of any alternative reliable index, domestic prices have been used to deflate imports.

Source : Lok Sabha Debates, March 1976, and December 1977., RBI Collaboration Reports (1968 and 1974) ; CSO Statistical Abstracts ; company annual accounts ; and H.L. Chandhok, *Wholesale Price Statistics*, 1947-1978, 1978.

period 1947-48 to 1965-66. But thereafter their share declined to around 35 per cent. One of the implications of the high quantum of imports by foreign companies is the possible use of transfer prices—an issue discussed in some detail in Chapter 6.

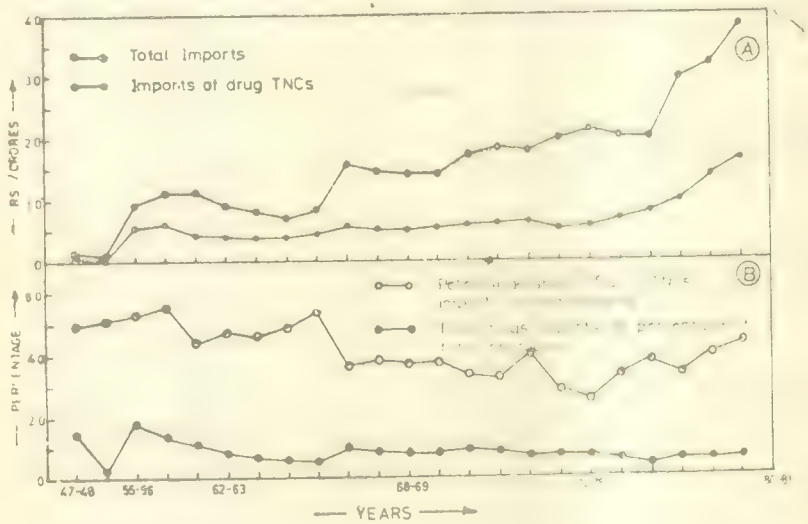


Fig. 3.3 : (A—B) Total imports of drugs & pharmaceuticals and the share of drug TNCs therein (1961/62=100) : 1947/48—1979/1980.

Column 9 shows imports as percentages of production. This percentage has declined from around 8 per cent in the 60s to 6 per cent in the 70s. The import dependence of Indian and foreign sector units at three points of time 1973-74, 1976-77 and 1978-79, appears in Table 3.20. This table depicts some noteworthy features. Column 2 in the table shows that between 1973-74 and 1978-79 the production of drugs and pharmaceuticals of the Indian sector of the industry has grown from Rs. 217 crores to Rs. 734 crores, *i.e.*, by an average annual growth rate of 47 per cent and their imports during this period increased from Rs. 19 crores to Rs. 38 crores, *i.e.*, by an average annual rate of 20 per cent. Interestingly, the production and imports of foreign sector units during this period grew at the reverse of these percentages growth of production and imports in the Indian sector. Thus between 1973-74 and 1978-79 the production of drugs and pharmaceuticals of foreign companies increased from Rs. 257 crores to

TABLE 3.20

Import Dependence of Indian and Foreign Sectors

(Rs. /crores : Current prices)

Particulars	*Indian Sector**			*Foreign Sector*		
	*Production***	*Imports*	*M/P ×100*	*Production*	*Imports*	*M/P ×100*
1	*2*	*3*	*4*	*5*	*6*	*7*
1973-74	217	18.93	8.72	257	7.47	2.90
1976-77	495	24.37	4.92	355	14.36	4.05
1978-79	734	37.74	5.14	516	24.99	4.84

* Public, Large and Small-scale sectors.

** Formulations and bulk drugs.

Source : Table 3.10 and Table 3.19.

Rs. 516 crores, *i.e.*, by an average annual rate of 20 per cent, but their imports increased from Rs. 8 crores to Rs. 25 crores, *i.e.*, by an average annual growth rate of some 47 per cent. These figures reveal two things. First, that over the period 1973-74 to 1978-79 the imports as percentage of production have declined (from 8.72 per cent to 5.14 per cent) in the case of the Indian sector but have increased (2.90 per cent to 4.84 per cent) in the case of the foreign sector. Secondly, the data show a much larger import dependence against total production in the case of foreign companies than their counterparts, *i.e.*, the Indian companies.

Exports of Drugs and Pharmaceuticals

Table 3.21 (also Figure 3.4) shows: (a) the exports of both the bulk drugs and formulations at current and constant (1961-62) prices for the period 1947-48 to 1979-80, (b) the share of foreign sector in total exports, (c) the percentages of imports to total production, and (d) the trade balance.

Columns 2 and 3 show that bulk drugs and formulations constitute respectively around 30 per cent and 70 per cent of total export of drugs which in real terms rose steadily from an insignificant Rs. 0.02 crores in 1947-48 to Rs. 5.51 crores in 1968-69 and further to Rs. 17.50 crores in 1979-80. Average annual percentage rise (Column 9) shows that exports grew at 21 per cent per annum

TABLE 3.21

Exports of Drugs and Pharmaceuticals : 1947-48—1979-80

(Absolute amount in Rs. crores)

Year	Exports (Current prices)			Share	Exports (1961-62 prices)			Average annual percentage +/− in 8	Share of drug TNCs in 8	Average annual +/− in 10	10 as percentage of 8	Production (1961-62 prices)	8 as percentage of production	Exports ÷ Imports
	Bulk drugs	Formulations	Total	of drug TNCs in 4	Bulk drugs	Formulations	Total							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1947-48	0 008(50)	0.008(50)	0.016	0.005	0.01	0.01	0.02	—	0.01	—	50.00	11	0.18	0.01
1951-52	0.077(45)	0.094(55)	0.17	0.05	0.09	0.11	0.20	180.0	0.06	100.00	30.00	40	0.50	0.20
1955-56	0.02 (42)	0.03 (68)	0.05	0.02	0.02	0.03	0.05	−15.00	0.02	−13.33	40.00	56	0.09	0.01
1960-61	0.39 (38)	0.63 (62)	1.02	0.30	0.39	0.63	1.02	323.33	0.30	233.33	29.41	80	1.28	0.06
1961-62	0.36 (37)	0.60 (63)	0.96	0.30	0.36	0.60	0.96	−5.88	0.30	Nil	31.25	100	0.96	0.09
1962-63	0.38 (35)	0.70 (65)	1.08	0.40	0.37	0.69	1.06	10.42	0.39	30.00	36.79	118	0.90	0.12
1963-64	0.43 (34)	0.84 (66)	1.27	0.30	0.42	0.82	1.24	16.98	0.29	Neg	23.39	131	0.95	0.15
1964-65	1.11 (50)	1.11 (50)	2.22	2.00	1.07	1.07	2.14	72.58	1.93	565.52	90.19	150	1.43	0.27
1965-66	1.89 (62)	1.16 (38)	3.05	2.20	1.80	1.10	2.90	35.51	2.09	8.29	72.07	166	1.75	0.35
1966-67	2.51 (67)	1.24 (33)	3.75	3.40	2.23	1.10	3.33	14.83	3.03	44.98	90.99	169	1.97	0.21
1967-68	1.64 (45)	2.00 (55)	3.64	3.60	1.35	1.64	2.99	−10.21	2.96	−2.31	99.00	164	1.82	0.21
1968-69	2.31 (46)	2.75 (54)	5.06	1.30	1.86	2.22	4.08	36.45	1.05	−64.52	25.74	190	2.15	0.29
1969-70	2.61 (36)	4.55 (64)	7.16	2.10	2.01	3.50	5.51	35.05	1.62	54.29	29.40	193	2.85	0.39
1970-71	2.53 (26)	7.22 (74)	9.75	4.51	1.77	5.06	6.83	23.96	3.16	95.06	46.27	210	3.25	0.40
1971-72	2.62 (27)	7.21 (73)	9.83	4.56	1.81	4.97	6.78	−0.73	3.14	−0.63	46.31	248	2.73	0.37
1972-73	4.06 (35)	7.44 (65)	11.50	5.04	2.76	5.06	8.82	30.09	3.43	9.24	38.88	258	3.42	0.56
1973-74	2.90 (18)	13.15 (82)	16.05	6.50	1.95	8.86	10.81	22.56	4.38	27.70	40.52	275	3.93	0.61
1974-75	6.05 (24)	19.23 (76)	25.28	7.80	3.77	11.98	15.75	45.70	4.86	10.96	30.86	349	4.51	0.74
1975-76	6.99 (30)	16.43 (70)	23.42	11.52	3.93	9.23	13.16	−16.44	6.47	33.13	49.16	399	3.30	0.65
1976-77	8.11 (32)	17.12 (68)	25.23	13.58	4.25	8.97	13.22	0.46	7.12	10.05	53.86	472	2.80	0.65
1977-78	8.87 (35)	16.72 (65)	25.59	16.22	4.57	8.61	13.18	0.30	8.35	17.28	63.35	556	2.37	0.44
1978-79	9.50 (31)	21.00 (69)	30.50	17.30	4.90	10.84	15.74	19.42	8.93	6.95	56.73	640	2.46	0.49
1979-80	10.70 (31)	23.60 (69)	34.30	19.38	5.46	12.04	17.50	11.18	9.88	10.64	56.46	725	2.41	0.46

Notes : Figures for the period 1947-48 to 1963-64 in columns 2 and 3, for the period 1947-48 to 1959-60 in column 5 and for the period 1978-79 to 1979-80 for all the columns are estimates. Exports have been deflated at domestic wholesale price index.

Sources: (1) Basic Export Promotion Council, Export performance members of the drugs and pharmaceuticals and fine chemicals. (2) RBI, Foreign Collaboration in Indian Industry (1968 and 1974). (3) Lok Sabha Debates, March 1974, and April 1976. (4) Company annual accounts. (5) Tables 3.8 & 3.19.

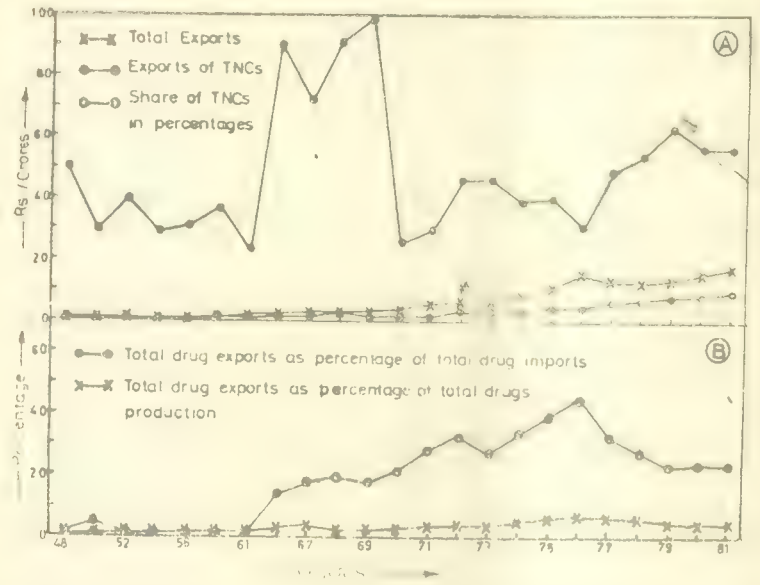


Fig. 3.4 : (A—B) : Total exports of drugs and pharmaceuticals and the share of drug TNCs therein (1961/62=100) : 1947/48-1979/1980

in the 60s ; but this rate declined to only 10 per cent per annum in the 70s. As against this, the exports of foreign drug companies rose from a mere Rs. 50,000 in 1947-48 to Rs. 1.62 crores in 1969-70 and further to Rs. 9.88 crores in 1979-80. But owing to a smaller base the average annual percentage rise in exports (Column 11) for this sector works out to be 60 per cent in the 60s and 13 per cent for the 70s. Foreign drug companies account for around 50 per cent (Column 12) of total exports of drugs from the country. The table shows that in some years, as in 1966-67, these companies accounted for over 90 per cent share in the total exports of drugs. These high values of exports like those for imports may imply serious transfer price manipulations by foreign companies. Column 14 depicts the trade balance which, it can be seen, is negative for the entire period 1947-48 to 1979-80 ; currently, imports exceed exports by around 50 per cent.

As regards the percentage share of exports to production, Column 13 shows that this percentage is insignificant although it has risen steadily from less than 1 per cent in the 50s to around 2 per cent in the 60s and further to slightly more than 3 per cent

in the first half of the 70s. Thereafter, it indicates a decline. This fall could be, among other things, because of the increasing domestic demand for drugs.

Table 3.22 shows the share of production exported by the Indian and foreign sectors at three periods of time—1973-74, 1976-77 and 1978-79.

TABLE 3.22

Exports as Percentage of Production of Indian and Foreign Sectors

(Rs./Crores : Current Prices)

Particulars	*Indian Sector**			*Foreign Sector*		
	*Production***	*Exports*	*X/P × 100*	*Production*	*Exports*	*X/P × 100*
1	*2*	*3*	*4*	*5*	*6*	*7*
1973-74	217	9.55	4.40	257	6.50	2.53
1976-77	495	11.65	2.35	355	13.58	3.83
1978-79	734	13.20	1.80	516	17.30	3.35

* Public, large and small-scale sectors.
** Formulations and bulk drugs.

Source : Table 3.10 and Table 3.21.

Table 3.22 shows that the exports of drugs by firms in the Indian sector have risen much slowly than their production, as a result their share of exports to production has declined from 4.40 per cent in 1973-74 to 1.80 per cent in 1978-79. On the other hand, in the case of the foreign sector, whereas, their production registered a two-fold rise during this period, their exports increased nearly three-fold. As a result, their share of exports in production has increased from 2.53 per cent in 1973-74 to 3.35 per cent in 1978-79.

Summary

The growth of the pharmaceutical industry in India, which can be traced to the British colonial period, was sluggish till 1947, owing primarily to the British policy of shipping out raw materials and selling back the finished products. The two world wars did give an impetus to the industry's growth by creating a large

demand for drugs. Most foreign drug companies had opened a place of business in India by the time India attained independence. The post-independence influx of these companies can be attributed to high tariff and quota restrictions and to government's policy of industrialisation by way of import substitution. Government added its share to the tempo of the industry's development by setting up two public sector undertakings—HAL (1951) and IDPL (1964). The growth of the pharmaceutical industry has also resulted in favourable forward and backward linkages. The data on industry and ownership structure showed that there are around a hundred and twenty units in the large-scale sector and about two thousand five hundred units in the small-scale sector.

An investigation of features on the demand side for drugs reveals that per capita consumption of drugs for total population is as low as Rs. 10 and for 30 per cent of the population residing in urban and semi-urban areas (which are said to be the main consumers of allopathic drugs), Rs. 30. Regression coefficients show that drug consumption in India is positively related to rise in real income and negatively related to rise in relative drug prices.

The position regarding R & D in the drug industry shows that despite the efforts of public sector units, they have failed to make any significant breakthrough in drug research owing primarily to lack of coordination in their various research departments and because of the academic nature of the research undertaken by them. The private sector units' failure in R & D is reflected in their meagre spending of less than two per cent of their sales income for research purposes.

The production of drugs has recorded a real annual growth rate of 13 per cent since 1947. At current prices, the value of production of formulations stood at Rs. 1,100 crores in 1978-79, in which the foreign sector has a share of 43 per cent, Indian sector 32 per cent, small-scale sector 18 per cent and public sector 6 per cent. The corresponding shares of these sectors in the Rs. 200 crores worth of bulk drugs production in the same year is 20 per cent, 38 per cent, 10 per cent and 25 per cent. The share of foreign drug firms in the total production has fallen from 54 per cent in 1973-74 to 44 per cent in 1978-79 in the case of formulations and from 56 per cent to 28 per cent in the case of bulk drugs. Analysis of capacity utilisation data shows that

whereas, the production of certain drugs lags behaind the increase over their capacity, certain drugs like sulphas are being produced in excess. There is also evidence to show that drug firms produce many drugs far in excess of their permitted capacity. Data on concentration in production of drugs show that despite a large number of large and small-scale units operating in the industry, seventy per cent of the industry's sales are shared by thirty large, mainly foreign companies. This is indicative of the oligopolistic nature of the industry. But monopolistic features in various sub-markets of drugs are also prevalent in the country. The sales of foreign drug companies in India account for about five per cent of their parents' total sales abroad. The direct and indirect employment in the industry stands at around nine lakh persons. A rough skill-intensity index calculated for the industry was found to be as high as 0.89. The high-salaried personnel drawing Rs. 36,000 per annum or more account for around 10 per cent of total wage bill of drug companies. The data on capital investment show that since 1952 it has registered a real annual growth rate of 18 per cent. At 1961-62 prices, the capital investment in the industry stands at Rs. 180 crores in 1978. In this, the foreign sector accounts for 43 per cent, public sector 33 per cent and Indian sector 24 per cent. The available statistics indicate that production in the industry has increased twice as fast as the employment and four times as fast as capital investment, indicating a significant increase in out-turn per employee and per unit of capital.

An examination of trade statistics showed that between 1960 and 1980 imports have grown at the rate of 8 per cent per annum. Foreign drug companies account for around one-third of the total imports and the data for the 70s indicate that import dependence of these companies has increased whereas, that of Indian companies has declined. Exports have grown at 15 per cent per annum between 1960 and 1980. The bulk drugs and formulations account for respectively 30 per cent and 70 per cent share in the total drug exports. Foreign drug companies' share in total drug exports is around 60 per cent. Total drug exports as per cent of total drug production are 2.5 per cent. Imports exceed exports by around 50 per cent. Data for the 70s show that drug exports as per cent of drug production have slightly risen in the case of foreign companies but have fallen in the case of Indian companies.

Notes and References

1. B. Shah, "A Growth Profile of Pharmaceutical Industry", in Second Conference Souvenir of Commonwealth Pharmaceutical Association, p. 2.
2. *Ibid.*
3. Planning Commission, GOI, *First Five Year Plan*, p. 519.
4. *Ibid.*
5. Planning Commission, GOI, *Second Five Year Plan*, p. 410.
6. Planning Commission, GOI, *Third Five Year Plan*, p. 484.
7. Planning Commission, GOI, *First Five Year Plan*, pp. 437-38.
8. *Ibid.*, p. 438.
9. Planning Commission, GOI, *Sixth Five Year Plan of Janata Government*, p. 192.
10. *Annual Survey of Industries*, 1969, Central Statistical Organisation, GOI. The data pertain to 211 registered factories employing 50 or more workers with the aid of power, or 100 or more workers without the aid of power.
11. It is, however, pertinent to note in this respect the observations of the Directorate General of Employment and Training (DGET) which carrried out a survey on employment in the pharmaceutical industry in 1975. The DGET survey found that out of these 2303 units, only 1183 could respond to their questionnaire. They found that non-responding establishments had either changed their line of activities or were engaged in non-manufacturing side of the industry. We suggest that a proper account be maintained of units in the small-scale sector to determine, among other things, the mortality rates of these units owing to such reasons as the competition from large-scale units.
12. It should be noted that owing to the implementation of the Foreign Exchange Regulation Act (FERA), the ownership pattern is undergoing changes.
13. Ministry of Petroleum & Chemicals, Report of the Committee on Drugs & Pharmaceutical Industry, 1975.
14. *Ibid.*
15. The financial statements of both HAL and IDPL for the period 1970-71 to 1977-78 appear in the appendix of this chapter. (Tables 3.3 and 3.4).
16. But the expenditure on such drugs as vitamins and tonics could be high for this section of society.
17. Twenty Indian companies (including public sector undertakings) whose R & D work is recognised by the Department of Science and Technology are : (1) Ahura Chemicals Products, (2) Alembic Chemicals, (3) Bengal Immunity Research Centre, (4) Cadila Labs., (5) Calcutta Chemical Co., (6) Chemical Industries and Ph., (7) Chemosin, (8) Chowgule, (9) Dai-Ichi Karkaria, (10) Dey's Medical, (11) Fairdeal, (12) Haffkine Instt., (13) India Detonators, (14) IDPL (a) Antibiotics Plant, Rishikesh and (b) Synthetic Drugs Plant, Hyderabad, (15) Nitson Labs., (16) Ranbaxy Labs., (17) Sarabhai Chemicals, (18) Sarabhai Research Centre, (19) Suneeta Labs., and (20) Unichem Labs.

Twelve foreign companies whose R & D work is recognised by the Department are : (1) Ciba-Giegy, (2) Glaxo, (3) Hoechst, (4) Organon, (5) Raptakos, (6) Richardson Hindustan, (7) Sandoz, (8) Searle India, (9) Synbiotics, (10) Wyeth Labs., (11) Rallis India, and (12) Boots.

18. Ministry of Petroleum, Chemicals and Fertilisers, GOI, *Indian Drugs Statistics*, 1979-80.
19. UNCTAD, "Case studies in the transfer of technology", *The Pharmaceutical Industry in India*, 1977.
20. Drug Price Control Order 1979, presented in the Lok Sabha on 29th March 1978.
21. OPPI, *Directory of Members*, 1981.
22. Ministry of Petroleum and Chemicals, Report, 1975, op. cit., p. 24. The data are for 1973.
23. *Economic Times* (Research Bureau), "Top Executives in Pharmaceutical Industry : High Technical Competence," January 1 and 2, 1977.
24. For instance, the technical director of Boehringer Knoll and production manager of Warner Hindustan were formerly with HAL and IDPL respectively.
25. OPPI, *Directory of Members*, 1981.

APPENDIX

TABLE 3.3

Financial Statement of Hindustan Antibiotics Limited 1970-71—1977-78

(Rs./Lakhs)

Item	*1970-71*	*1971-72*	*1972-73*	*1973-74*	*1974-75*	*1975-76*	*1976-77*	*1977-78*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
1. Authorised capital	400	400	400	400	1000	1000	1000	1000
2. Equity capital	247	247	247	247	312	352	422	547
3. Loans :								
(a) Total	12	23	85	209	481	698	876	1028
(b) Foreign	—	—	—	—	—	—	—	—
4. Net worth	855	845	868	701	443	192	209	125
5. Capital employed	828	755	921	876	888	841	1012	1056
6. Working capital	532	482	545	524	565	543	665	716
7. Sales/Operating income	683	801	861	872	744	1031	1544	1429
8. Profit	20	26	27	—133	—287	—220	311	—103
9. Net profit	14	11	24	—148	—326	—292	—54	—211
10. Dividend declared	12	12	12	—	—	—	—	—
11. Percentage of								
(i) Net profit to equity	5.5	4.4	9.7	—59.9	—104.5	—83.0	—12.8	—38.6
(ii) Profit to capital employed	2.3	3.5	2.9	—15.2	—32.3	—26.2	30.7	—9.8
(iii) Net profit to net worth	1.6	1.3	2.8	—21.1	—74.0	—152.1	25.8	—168.8
(iv) Sales to capital employed	82.4	106.1	93.5	99.5	83.8	122.6	152.6	135.5
(v) Total loans to equity	4.9	9.3	34.4	84.6	154.2	198.3	207.6	187.9
(vi) Foreign loans to capital employed	—	—	—	—	—	—	—	—

Source : Ministry of Petroleum, Chemicals and Fertilisers, GOI, *Indian Drugs Statistics, 1979-80*, p. 232.

TABLE 3.4

Financial Statement of Indian Drugs and Pharmaceuticals Limited 1970-71—1977-78

(*Rs./Lakhs*)

Item	*1970-71*	*1971-72*	*1972-73*	*1973-74*	*1974-75*	*1975-76*	*1976-77*	*1977-78*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
1. Authorised capital	3000	3000	4000	4000	4000	4000	5000*	7600
2. Equity capital	2595	2750	3370	3420	3420	3770	4580	6522
3. Loans								
(a) Total	5786	6279	5928	6039	6466	7112	7098	6650
(b) Foreign	36	24	12	4	—	—	—	—
4. Net worth	—444	—766	—508	—630	—371	341	1560	4192
5. Capital employed	5059	5298	5194	5181	5788	6970	7880	9349
6. Working capital	1039	1363	1395	1498	2306	3673	4568	5979
7. Sales/Operating income	1379	2336	2793	2767	4584	5852	7314	7927
8. Profit	—397	—73	—97	106	613	803	1078	1460
9. Net profit	—764	—470	—370	—182	249	355	432	797
10. Dividend declared	—	—	—	—	—	—	—	—
11. Percentage of								
(i) Net profit to equity	—29.4	—17.1	—11.0	—5.3	7.3	9.4	9.4	12.2
(ii) Profit to capital employed	—7.8	—1.4	—1.9	2.0	10.6	11.5	13.7	15.6
(iii) Net profit to net worth	172.1	61.4	72.8	28.9	—67.1	104.1	27.7	19.0
(iv) Sales to capital employed	27.3	44.0	53.8	53.4	79.2	84.0	92.8	84.8
(v) Total loans to equity	223.0	228.3	175.9	176.6	189.1	188.6	155.0	102.0
(vi) Foreign loans to capital employed	0.7	0.5	0.2	0.1	Neg.	—	—	—

* It was raised to Rs. 60 crores w.e.f. 21-11-1977.

Note : IDPL has been reported to have incurred a staggering loan of over Rs. 30 crores in 1981-82.

Source : Ministry of Petroleum, Chemicals and Fertilisers, GOI, Indian Drugs Statistics, 1979-80, p. 231.

TABLE 3.5

Data Base of Regression Equations

Year	*Per capita NDP (1961-62=100)* x	*Ratio of price indices** w	*Per capita drug consumption (100% population)*** y_m	*Per capita drug consumption (30% population)* y_n	*Log* x	*Log* w	*Log* y_m
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1962-63	308.2	0.984	2.59	8.63	2.4889	—0.0070	0.4133
1963-64	318.3	0.936	2.82	9.41	5.5028	—0.0287	0.4502
1964-65	335.1	0.847	3.14	10.45	2.5251	—0.0721	0.4969
1965-66	311.0	0.799	3.37	11.22	2 4928	—0.0975	0.5276
1966-67	307.9	0.750	3.32	11.08	2.4884	—0.1249	0.5211
1967-68	326.0	0.727	3.16	10.54	2.5132	—0.1385	0.4997
1968-69	328.0	0.747	3.62	12.08	2.5159	—0.1267	0.5587
1969-70	342.0	0.756	3.56	11.88	2.5340	—0.1215	0.5514
1970-71	351.8	0.787	3.79	12.64	2.5463	—0.1040	0.5786
1971-72	348.5	0.759	4.39	14.64	2.5422	—0.1198	0.6425
1972-73	335.9	0.697	4.47	14.89	2.5262	—0.1568	0.6503
1973-74	345.6	0.586	4.61	15.37	2.5386	—0.2321	0.6637
1974-75	342.1	0.507	5.71	19.03	2.5341	—0.2950	0.7566
1975-76	365.4	0.568	6.46	21.55	2.5628	—0.2457	0.8102
1976-77	363.2	0.597	7.52	25.08	2.5601	—0.2240	0.8762
1977-78	382.0	0.578	8.63	28.77	2.5821	—0.2381	0.9360
1978-79	391.0	0.577	9.73	32.42	2.5922	—0.2388	0.9881

* Index of wholesale prices of drugs divided by index of wholesale prices of all commodities. This shows the relative cheapness of drug prices. The index of prices at 1961-62 level was available up to 1970-71 only. Thereafter the base of index numbers were spliced to arrive at constant price figures.

** Per capita consumption of drugs was calculated after deducting the exports from the production figures and dividing the resultant figure by mid-term population. Because of non-availability of data on imports of formulations and bulk drugs separately, it was taken that the imports were mainly bulk drugs that went into the production of formulations.

TABLE 3.6

Regression Equations

Consumption of drugs (linear and log linear case)

y_m = Per capita consumption of drugs

x = Per capita NDP

w = Ratio of price indices

(Figures in the brackets indicate T-test)

t_{14} : 0.05 = 1.761 5% level of significance

t_{14} : .01 = 2.624 1% level of significance

*=Significant at 5 per cent level of significance

**=Significant at both 5 per cent and 1 per cent level of significance

Sr. No.	*Equation*	*a*	b_1	b_2	R^2
1. (a)	$y_m = a + b_1 x + b_2 w$	13.4913 (—2.3777)	0.06237 (4.8715)**	—4.2304 (—1.8261)	0.8505**
(b)	$y_m = a + b_1 x$	—22.1799 (6.6738)**	0.0789 (8.1249)**	—	0.8149**
(c)	$y_m = a + b_2 w$	13.5326 (7.1524)**	—	—12.2246 (4.7137)**	0.5970**
2. (a)	$\log y_m = \log a + b_1 \log x + b_2 \log w$	—18.4770 (—4.9126)	3.3684 (5.1393)**	—0.9114 (—3.7081)	0.9065**
(b)	$\log y_m = \log a + b_1 \log x$	—28.2264 (7.7160)**	5.0950 (8.1209)**	—	0.8147**
(c)	$\log y_m = \log a + b_2 \log w$	0.8494 (7.6060)**	—	—1.8088 (6.3707)**	0.7302**

TABLE 3.12

Excess Drug Production by 12 Foreign Drug Companies : 1974-76

Sr. No.	*Name of the company and the drug manufactured*	*Unit*	*Licensed capacity*	*Permissible capacity*	*Actual production*			*Excess production*		
					1974	*1975*	*1976*	*1974*	*1975*	*1976*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1.	**Bayer India Ltd.**									
	Chloroquine phosphate	Kgs.	12,000	15,000	18,248	17,459	24,231	3,248 (22)	2,459 (16)	9,231 (62)
	Mesulphen	Kgs.	10,000	12,500	8,020	7,784	12,743	—	—	243 (2)
2.	**Burroughs Wellcome**									
	Bephenium hydroxynaphoate	Tonnes	5	6.25	14.434	15.567	13.407	8.184 (131)	9.317 (149)	7.157 (115)
	Cyclizine HcL and its salts	Kgs.	250	312.50	433.160	567.20	527 5	120.66 (32)	254.70 (82)	215.00 (69)
	D.C.C.	Kgs.	2,000	2,500	1014.30	1455.20	6034.50	—	—	3534.50
	Pyrimethamine pure	Kgs.	240	300	279.825	395.05	85.5	—	95.05 (32)	—

(Contd.)

TABLE 3.12 (*Contd.*)

1	2	3	4	5	6	7	8	9	10	11
	Succiylncholine chloride	Kgs.	5	6.25	—	68.00	43.50	—	61.75 (988)	37.25 (596)
	Trimethoprim	Kgs.	3,600	4,500	—	2269.25	4772.97	—	—	272.97
	Zinc undocyclenate	Kgs.	200	250	303.5	415.4	291.5	53.5 (21)	165.4 (66)	41.5 (17)
	Isopranaline sulphate	Kgs.	100	125	163.1	43.018	22.685	38.1	—	—
3.	**Cynamid**									
	Tetracyclines	Tonnes	10	12.50	19.45	22.82	21.17	6.95 (56)	10.32 (83)	8.67 (69)
4.	**Glaxo**									
	Calcium sennocide	Tonnes	3*	3.75	5.417	—	—	1.667 (44)	—	—
5.	**Hoechst**									
	Benzocaine	Kgs.	2,000	2,500	4,804	4,457	4,600	2,304 (92)	1,957 (78)	2,100 (84)
	Auil Malcate	Kgs.	4,000	5,000	4,928	7,433	6 546	—	2,433 (49)	1,546 (31)
	Fursenide	Kgs.	1,200	1,500	598	3,346	2,352	—	1,846 (123)	852 (57)
6.	**May & Baker**									
	Promethazine hydrochloride/base pure	Kgs.	1,000	1,250	486	1009.00	1351.00	—	—	101.00 (8)
	Promethazine 8-chlorotheophyllinate	Kgs.	600	750	332	510.1	906.0	—	—	156.00 (21)
	Neptal	Kgs.	272	340	190	387.0	141.0	—	47.00 (14)	—
7.	**Merck Sharp & Dohme**									
	Cyproheptadine HcL	Kgs.	120	150	212	212	195	62 (41)	62 (41)	45 (30)
8.	**Pfizer**									
	Oxytetracycline and tetracycline	Tonnes	9+5=14	11.25+ 6.25= 17.50	36.31	43.937	46.260	18.81 (107)	26.437 (151)	28.76 (164)
	Banminth	Tonnes	0.3	0.375	—	0.512	0.375	—	0.137	—
	Protein hydrolyste	Tonnes	110	137.5	213.37	193.8	239.695	75.87 (55)	56.30 (41)	102.195 (74)
9.	**Roche**									
	Dehydroemetine dihydrochloride	Kgs.	95	118.75	—	64.00	395.00	—	—	276.25 (233)
	Vitamin A	MMU	15	18.75	28	22.00	30.00	9.25 (49)	3.25 (17)	11.25 (60)

(*Contd.*)

TABLE 3.12 (*Contd.*)

1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
10.	**Searle**									
	Dimenhydrinate	Kgs.	190	237.50	147.4	218.10	474.500	—	—	237.00 (100)
	Diphenoxylate hydrochloride	Kgs.	200	250.00	689.3	669.50	129.300	439.3 (175)	419.50 (167.8)	—
	Proponiheline	Kgs.	120	150.00	532.6	435.20	731.00	382.6 (255)	285.20 (190)	581.00 (387)
	Spronolactone	Kgs.	28	35.00	41.415	81.38	80.876	6.415 (18)	46.38 (133)	45.876 (231)
11.	**Suhrid Geigy**									
	Synistamin (synopan)	Kgs.	300	375	—	429.70	637.00	—	54.700 (15)	262.00 (70)
	Crotomax	Kgs.	1,000	1,250	—	2331.509	3519.6	—	1081.509 (87)	2269.6 (182)
	Ethylbutamide/propylbutamide	Kgs.	180	225	—	882.134	1127.50	—	657.134 (292)	902.50 (401)
	Depsonil	Kgs.	48	60	—	1074.5	473.3	—	1014.5 (1691)	413.3 (689)
	Sugarnil (tenderil)	Tonnes	6	7.50	—	15.834	19.758	—	8.334 (111)	12.258 (163)
	Mazatol (carbamizapine)	Tonnes	1.20	1.50	—	2.443	3.626	—	0.943 (63)	2.126 (142)
	Gasicain	Tonnes	1.00	1.25	—	2.886	2.975	—	1.636 (131)	1.725 (138)
12.	**Wyeth Labs.**									
	Corticosteroids (Prednisolane)	Kgs.	720	900	997.94	1049.15	1186.60	97.94 (11)	149.15 (17)	286.60 (32)
	17 Alpha hydroxy progesterone caproate	Kgs.	270	337.50	309.30	331.00	525.65	—	—	188.15 (56)
	Methyl testosterone	Kgs.	44.40	55.50	56.90	45.40	21 05	1.40 (2.5)	—	—

* Was enhanced to 5 tonnes w.e.f. 2-2-1975.

Note : Figures in the brackets indicate per cent excess production.

Source : Parliament Debates L.T. No. 1342/77 ; Company Annual accounts.

4

Drug Prices and Drug Price Control Orders in India: An Assessment

ONE of the most controversial issues related to the pharmaceutical industry in India is the issue of drug prices and drug price control orders (DPCO) promulgated from time to time. An attempt has been made in this chapter to examine, with the help of factual data, the various aspects of these controversies. The fact that 'prices' and 'pricing policies' are central to the growth of any industry needs no emphasis. These policies, however, assume particular importance on some additional grounds in the case of pharmaceuticals. These are discussed in the first section below. Section II examines the nature and scope of DPCO in India and analyses the special features, strength, and weaknesses of various control orders. The third section deals with the economic consequences of DPCO. Here we primarily concentrate on examining in some detail the impact of price controls on the profitability of the industry. This is done in view of the fact that the financial operations of companies—plough-back policies, dividend policies, sources of funds etc. (these are discussed in the next two chapters)—depend largely on the level of their profitability. The last section discusses the modus operandi of drug prices and drug price control orders in India.

I. Importance of Drug Price Controls

The case for drug price control is made on the basis of the fact that drugs constitute an essential part of health care of an individual. And furthermore, as we pointed out in the second chapter, compared to other consumer goods drugs have a very unique standing in the market. In the case of all other consumer goods, both the functions—the choice of a product and the payment of its price—are performed by the consumer. Here the demand for a product is normally a function of income and relative prices. But in the case of drugs the decision-maker is the physician whose choice is not necessarily guided by the patient's income and product prices. This demarcation between the decision-maker and the consumer *per se* introduces a strong imperfection in the market from the consumer's side. And the very life-saving therapeutic value of drugs renders the demand for drugs completely price inelastic. Further, the tastes of the consumer and the availability of substitutes and complements do not play any role in the purchasing schedule of the consumer. These peculiarities make him vulnerable to high drug prices which the producers could charge in the absence of any price controls. The consumer's vulnerability to high prices is further enhanced because of imperfections on the supply side, for as we have seen, fifty per cent of the world sales of pharmaceuticals lies in the hands of thirty leading transnational corporations. In host countries the affiliates of these corporations account for a major portion of total sales, the balance being met by hundreds of local, mostly small-sized firms. In such a situation, price control on drugs would not only protect the consumer but would also act as a check on the undue large profits of drug MNCs as also on wasteful expenditure on promotional campaigns so characteristic of modern firms.

II. Nature and Scope of DPCO in India

There was no statutory control over the prices of drugs prior to 1962. Prices were brought under statutory control for the first time in 1962 in the wake of the Chinese aggression and the subsequent declaration of Emergency. The Drugs (display of prices) Order 1962 and the Drugs (control of prices) Order 1963 were promulgated under the Defence of India Act. These orders froze the prices of drugs as on 1st April 1963. These steps were taken as an emergency measure for dealing with any apprehended dislocation in the supplies of essential drugs and a possible increase in their prices as a consequence. But the Government came under heavy criticism from the industry circles on the ground that the prices of various raw materials and inputs were not frozen simultaneously. Government introduced a system of selective price increase in 1966. But at the same time it passed another order, Drug Prices

(display and control) Order which made it obligatory for the manufacturers to obtain prior approval of government before increasing the prices of any of their formulations. Later, by an amendment, items with pharmacopeial names were exempted from price approval. Exemptions were also made in the case of new drugs evolved as a result of original research and which were marketed for the first time in the country.

The Government, while making changes in the Drug Price Control Orders, identified 18 essential drugs and referred them to the Tariff Commission for investigation of their cost structure and to recommend their fair-selling prices. The Commission submitted its report in 1968 and came out with the following two broad observations concerning the prices of drugs : (1) The domestic prices of the selected drugs are generally very much lower in most cases in other countries (para 24.5), and (2) by and large the prices in the Indian market of formulations compare favourable with the prices of similar formulations in the domestic markets of other countries (para 24.7).[1] The higher prices of selected drugs were attributed to three factores : first, to the high cost of equipments, intermediates, and raw materials, a large part of which was imported ; second, to the small size and lower capacities of production as compared to other countries ; and, thirdly, to the patent law and related conditions for the transfer of know-how.

Although the Tariff Commission study was primarily confined to 18 essential drugs, the Goverenment felt that the data and analysis made available could well be made a basis for evolving certain principles and guidelines to improve and rationalise the existing control measures. Accordingly, after a re-examination of the Tariff Commission recommendations, the ex-factory prices of 18 essential drugs were revised and frozen, and a new Drug Price Control Order under the Essential Commodities Act was passed on 16th May 1970. The main features of the order were as follows. The drugs were divided into two categories, essential and non-essential. The prices of drugs in both the categories were to be fixed by the following formula :

Retail Price=(Material cost+Conversion cost+Packaging)×(1+mark-up per cent) 100+(Excise duty+Sales duty+Sales tax)

Provision was also made for a pre-tax return of 15 per cent on capital employed. The mark-up allowed, which was 75 per cent on the total ex-factory cost, included the provisions for outward freight, distribution costs and trade commission, promotional expenses and manufacturer's margin. In the case of formulations involving original R & D, a higher mark-up upto 100 per cent was made permissible. And in respect of formulations involving original research on basic drugs in India a mark-up of 150 per cent was permitted.

The DPCO of 1970 also provided an alternative scheme to the above system of price fixing. The alternative scheme allowed some flexibilities to a manufacturer in the mark-ups but restricted the gross profits to 15 per cent of the turnover in any year. The excess thereof, if earned, was to be funded separately and could be utilised with the prior approval of the government for (i) research and development, (ii) adjustment against future profits or losses, and (iii) such other purposes as may be specified by the Central Government from time to time.

The DPCO of 1970 after its implementation came under heavy criticism on several grounds. For instance, it was pointed out that the Tariff Commission had worked out the costs on the basis of total licensed capacity and not on the actual installed capacity currently being utilised. Moreover, in computing the total capital employed, the Commission valued all assets at book value and not at the market value. The major debate between the government and the industry occurred on the adequacy of rates of return on capital employed. It was pointed out that 15 per cent pre-tax return on capital employed permitted by the government was not only inadequate but fetched almost no returns for the small-scale druggist who had a turnover of Rs. 1 lakh.[2]

The overall price level of drugs was expected to fall after the implementation of the DPCO 1970. But instead, it rose in the case of a number of drugs. The Delhi Administration Survey Team studied the prices of 616 drugs after the implementation of the DPCO in 1970. The team reported that prices in 258 cases had declined, in 191 cases had risen and in 167 had remained unchanged. The survey also covered 23 drugs produced by State-owned units and found that barring a fall of 10 per cent in three cases, the remaining 20 drugs had registered a rise—in six cases more than 40 per cent, in four cases between 20 and 40 per cent

in eight cases between 10 and 20 per cent and in two cases between 5 and 10 per cent. Prices of penicillin-based drugs which constitute around 12 per cent of the total drug market in the country, were found to have risen from anywhere between 48 and 88 per cent, and the prices of sulpha drugs from 40 to 50 per cent. The wholesale price index for drugs and medicines (1960-61 = 100) showed a rise from 129.8 in 1969-70 to 142.6 in 170-71 (Table 4.4). This was the highest rise in price index in that year since 1962-63. One explanation for this unexpected rise in prices could be the artificial shortages created by the manufacturers, wholesalers and also by the retailers. Another notable feature besides this rise in prices of drugs was that most of the firms which had to reduce the prices of essential drugs were alleged to be making good the loss by shifting their production to non-essential drugs, most of which were fast-selling household medicines. Whereas, the large companies by virtue of their size could do so, the very size of the smaller firms made this diversification process difficult for them.

The DPCO of 1970 underwent changes from time to time according to the suggestions and criticisms received from the industry. But the matter never got settled. Ultimately it was referred to the Committee on Drugs and Pharmaceutical Industry which was set up in 1974 to study the various aspects of the industry. The Committee submitted its report in 1975.[3] Based on the recommendations of this Committee, the new DPCO was promulgated in April 1979.

The main features of the DPCO 1979 are as follows :

(a) Drugs are divided into four categories instead of two as was done in the DPCO 1970. The mark-ups allowed for the first two categories of drugs are respectively 40 per cent and 55 per cent. For the third category of drugs separate pricing for each producer is being done. But in no case is the mark-up to exceed 100 per cent. Drugs in category IV have been left free of price control.

(b) Besides laying down restrictions on mark-ups, additional restrictions of 'leader prices' based on the prices of efficient producers have been evolved. If prices in Category I and II drugs are found higher than the leader prices, the same will have to be reduced to the latter's level. Prices found lower than the leader prices will stay frozen at that level, and will require Government's

permission for upward revision.

(c) Maximum pre-tax return on sales exclusive of excise duty will range from 8 per cent to 13 per cent, depending on the nature of firm's production and its R & D activities. (Details are given in Table 4.1 in the appendix).

(d) In the case of bulk drugs which are manufactured indigenously and are also imported, Government can fix ; (i) retention prices for individual manufacturers, importers or distributors of such bulk drugs, (ii) a pooled price for the sale of such bulk drugs. Furthermore, where a manufacturer uses any such drug in his formulations either from his own production or procured by him from any other source, and if the prices of such bulk drugs are lower than the prices allowed to him, the manufacturer shall deposit the excess amount into an account named 'Drug Price Equalisation Account' and also sell the formulations at such prices as may be fixed by the Government.

(e) New drugs developed through original R & D efforts in the country and which have not been produced elsewhere are exempted from price control for a period of five years.

A careful reading of the DPCO 1979 reveals many drawbacks. The biggest flaw is its assumption that loss suffered by drug companies due to low mark-ups in Category I could be made good by introducing products from the remaining three categories. The argument, besides being irrational, does not hold good for many firms, especially those in the small-scale sector which have little control over the market and over their production facilities so as to manipulate them according to their wishes. As regards the licensing of capacities, para 38 of the order reads : "In regard to licenses where the capacities for bulk drugs or formulations have not been specified so far, capacities will be fixed depending on the nature of items produced and their essentialities subject to the highest production achieved in any one year during the three years ending March 31st, 1977." This criterion would certainly have worked in favour of large companies, especially the foreign companies which, as we have seen in the last chapter, produce many drugs much in excess of their licensed capacities. As regards the regularisation of excess capacity, para 34 of the order reads : "However, in the case of foreign companies which have a ratio of bulk to formulations of less than 1 : 5 (or 1 : 10 in the case of Indian companies), regularisation of excess production of

decontrolled formulations or household remedies may also be permitted upto the ceiling of rates." The Committee on Drugs and Pharmaceuticals had earlier pointed out that the biggest share of household remedies is in the foreign sector. If this section of drugs production is decontrolled, the high profits which are available to this sector will continue.

The DPCO 1979 like the DPCO 1970 has also been subjected to criticism from industry circles. Their main objection is to the lower mark-ups of 40 per cent and 55 per cent allowed on Category I and II drugs. The All India Manufacturers Organisation (AIMO) which endorsed many of the recommendations of the new DPCO, stated that the mark-ups in Categories I and II are too low and the break-even mark-up for any size of industry should be 80 to 90 per cent.[4] They argue that the sales promotion cost has greatly increased due to certain governmental regulations, increased salaries, travelling, printing and administrative expenses. The average expenses a manufacturer has to provide out of the mark-ups allowed to him add up to around 45 per cent.[5] It was predicted, after the implementation of the DPCO 1979, that the stringent mark-ups allowed on Category I and II drugs would discourage drug companies from undertaking production of medicines falling under these categories. And this could result in a shortage of many essential and life-saving drugs. This has turned out to be partly true. Upti̇l November 15, 1980, the shortage of 63 drugs was reported and admitted by the Government.[6] The DPCO 1979 has undergone changes from time to time, especially in the form of revision of price fixation of both the bulk drugs and the formulations. The dispute between the drug firms and the Government took a serious turn last year when six foreign firms[7] challenged in court the price fixation by Government under the DPCO 1979 and more were likely to join the fray.

III. Economic Consequences of DPCO

Whereas, the outcome of protests lodged by drug firms over the mark-ups allowed to them are not clear, certain economic consequences of the DPCO can be examined. The foremost of these relate to the profitability of the industry. There is no gainsaying the fact that profitability is central to the growth of any industry. The discussion on the issue of profitability assumes particular importance in our case owing to a number of additional

factors. In the preceding two chapters, we have noted that the pharmaceutical markets are characterised by a typical structure, unique conditions of demand, substantial concentration of manufactures and high barriers to entry. These features provide pharmaceutical firms with considerable 'market power' which is strengthened by them with the help of extensive promotional campaigns and other sales strategies. There is a presumption that these dominant undertakings make abnormally large profits. The truth of this proposition needs to be examined. For, if this is true, then it implies a few things. For example a high rate of profits could mean a greater availability of internal funds for future expansion if firms plough back a large part of their post-tax profits. This in turn would not only mean a comparatively lesser reliance on external sources of finance but in the long run it would also mean that firms have come to own a large part of their total assets through internally generated funds within the local economy and not from fresh flow of capital from abroad or from foreign trade operations. Furthermore, high profits on the part of affiliates of MNCs operating abroad may imply a greater amount of remittances on account of dividends/profits (along with service payments—technical knowhow fees, royalties, etc.) year after year of their operations in the host country. These remittances obviously strain the foreign exchange reserves of the host country. The validity of these propositions are examined in the next two chapters. Here we concentrate exclusively on the profitability of drug MNCs. We deal with two basic questions in this regard.

First, is the profitability of the pharmaceutical industry higher than other industries ?

Secondly, have the DPCOs dampened the profitability of the pharmaceutical industry, as is often claimed, especially by the drug companies ?

Profitability data for a rather larger period are required if we are to examine these two questions. The only reliable source of data that could be used for this purpose is the studies carried out by RBI and published under their 'Financial Statistics of Joint Stock Companies in India'. Profitability data from this source, for 18 years, 1960-61 to 1977-78 appear in Table 4.2 (in the appendix); 1977-78 is the latest year for which the data could be obtained.

In order to deal with the first question mentioned above, we compare the profitability level of the pharmaceutical industry with the profitability levels of All Industries and Chemical Industry. Two gross profit ratios—gross profits/total capital employed (GP/TCE) and gross profits/net sales (GP/NS)—and three net profit ratios—net profits/net worth (NP/NW), net profits/total capital employed (NP/TCE) and net profits/share capital (NP/SC)—are computed for this purpose for the entire eighteen-year period, 1960-61 to 1977-79. The table also depicts all these profitability ratios (but for a shorter period, 1970-71 to 1977-78) for our three groups of drug companies. The trends in these profitability ratios in the case of the pharmaceutical industry over this 18-year period also serve to answer the second question regarding the falling profitability of the pharmaceutical companies. The various profitability ratios are examined in detail below.

As regards the gross profit ratio to total capital employed, the Medicines and Pharmaceutical group show a distinctly higher ratio than the All Industries and also the Chemical Industry's level for the entire 18-year period, 1960-61 to 1977-78. Thus, against an average GP/TCE ratio of 37.4 per cent of Medicines and Pharmaceuticals group for the period 1960-61 to 1970-71 and 32.5 per cent for the period 1970-71 to 1977-78, the All Industries and Chemical Industry show respectively 17.6 per cent, 21.3 per cent and 22.7 per cent and 25.4 per cent of gross profits on total capital employed. The average for the entire period 1960-61 to 1977-78 shows that the Pharmaceuticals group generated 35.2 per cent of gross profits on total capital employed against only 19.3 per cent by All Industries and 23.9 per cent by Chemical Industry. Serial numbers 4-7 in the table depict the GP/TCE ratio in the case of our three groups of drug companies. It should be pointed out here that the RBI's sample of pharmaceutical companies comprises both Indian and foreign companies. And our 27 foreign drug companies comprising these three groups are a subset of the RBI sample, leaving mostly Indian companies in the latter. It is interesting to note that our three groups of companies show a comparatively higher rate of return of GP/TCE when compared with the total pharmaceuticals group of the RBI sample in Column 3. This indicates that the foreign drug companies are possibly generating higher gross profits on total capital employed (41.3 per cent on an average for 1970-71 to 1977-78) than the Indian companies (32.5 per cent on an average for the period 1970-71 to 1977-78). Inter-group comparison of our three groups shows that medium-sized companies are generating the highest percentage of GP/TCE (52.7 per cent on an average for 1970-71 to 1977-78) followed by large (38.0 per cent) and small-sized companies (37.4 per cent).

The gross profits ratio on net sales (GP/NS) also, like that of GP/TCE, shows that the Pharmaceutical Industry is generating comparatively higher gross profits on net sales than All Industries and the Chemical Industry. Thus, whereas the pharmaceutical companies generated on an average a gross profit rate of 17.5 per cent during the period 1960-61 to 1970-71, All Industries and Chemical Industry earned only 10.1 per cent and 15.3 per cent gross profits in their respective net sales. For the period 1970-71 to 1977-78, pharmaceutical companies generated on an average higher gross profits on their net sales (14.7 per cent) as compared to the All Industry's level (9.9 per cent) but slightly lower when compared to the Chemical Industry's level (14.9 per cent). Our three groups put together show on an average a higher GP/NS ratio (16.9 per cent) against the Medicines and Pharmaceutical level (14.7 per cent). An intergroup comparison for these groups shows that medium-sized companies earned on an average earned 18.6 per cent of GP/NS against 15.4 per cent by large-sized companies and 13.5 per cent by small-size companies.

Net profits to net worth ratio shows that Medicines and Pharmaceuticals group on an average earned 16 per cent of net profits on the total net worth between 1960-61 and 1970-71, against 12.5 per cent by the Chemicals Group and 9 per cent by all the industries put together. For the period 1970-71 to 1977-78, however, Medicines and Pharmaceuticals group generated on an average 14.7 per cent of net profits on net worth against a little higher 15.3 per cent by the Chemicals Group but a much lower 10.2 per cent by All Industries combined. But the average for the entire 18-year period, 1960-61 to 1977-78, works out to be the highest (15.4 per cent) for the Pharmaceuticals Group followed by Chemicals (13.7 per cent) and All Industries Group (9.5 per cent). The data for our three groups put together show that, on an average between 1970-71 and 1977-78, this group earned 16.4 per cent of net profits on net worth. This is highest when compared with the NP/NW ratio of all the three groups cited above

(Medicines and Pharmaceuticals, All Industries and Chemical Industry). An inter-group comparison shows that medium-sized companies were generating highest net profits on net worth (19.2 per cent on average for 1970-71 to 1977-78) followed by small (16.1 per cent) and large-sized companies (15.5 per cent).

Net profits to total capital employed ratio also depicts a consistently high ratio for Medicines and Pharmaceutical Group throughout the period 1960-61 to 1977-78. Thus, on an average, against the NP/TCE ratio of 14.6 per cent and 12.6 per cent for this group for the periods 1960-61 to 1969-70 and 1970-71 to 1977-78, the Chemicals Groups earned 5.8 per cent and 10.9 per cent as net profits on total capital employed and the All Industries combined earned 7.1 per cent and 7.3 per cent respectively. The average for the entire 18 years works out to be 13.7 per cent for Medicines and Pharmaceuticals group, 8.1 per cent for Chemicals and 7.2 per cent for All Industries. Our three groups put together show on an average 14.7 per cent of net profits on total capital employed for the period 1970-71 to 1977-78, which is highest when compared to all the three groups compared above. An inter-group comparison shows that medium-sized companies ranked first, generating on average 17.2 per cent of NP/TCE during the period 1970-71 to 1977-78, against 14.3 per cent by the large group and 12.3 per cent by the smaller group.

Finally, we come to the net profits to total share capital ratio depicting net earnings per hundred rupees share capital. This ratio also reveals features similar to that of earlier profit ratios. Thus, for the period 1960-61 to 1969-70, this ratio for the Medicines and Pharmaceutical Group works out to be on an average 29.6 per cent against 11.7 per cent of Chemicals Group and 15.8 per cent for All Industries group. However, for the second half of the period, i.e., 1970-71 to 1977-78 this ratio is slightly lower, 30.1 per cent for the Medicines and Pharmaceuticals group when compared with the Chemicals Group, 30.5 per cent, but much higher than the All Industries group, 20.1 per cent. But, for the entire 18-year period this ratio works out to be much higher (29.8 per cent) than that for Chemicals (20 per cent) and All Industries (17.7 per cent). Average net profits to share capital for our three groups combined during the period 1970-71 to 1977-78 works out to be the highest, 35.7 per cent, when compared to those for all the three groups cited earlier. For the same period, medium-sized

companies show the highest (47.4 per cent) net earnings on their net profits followed by the large group, 33.1 per cent, and the small group, 30.9 per cent.

The fact that the profitability of drug companies is higher compared to the profitability of All Industries and Chemical Industry is evident from the statistics in the preceding paragraphs. It should be noted at this juncture that the profitability of drug companies includes profits on both the formulations and the bulk drugs. We have elsewhere pointed out that profitability on formulations is considered to be higher than those on the bulk drugs. Though this is a popularly held view, no factual data are available in this regard. The reasons for non-availability of data pertaining to separate rates of return on formulations and bulk drugs are obvious. In the first place, it is difficult to assess and allocate the expenditures under various heads so as to apportion them accordingly between these two categories of drugs. Secondly, even if this is done at some stage in the production process, the companies for a number of reasons would not make public their rates of return on bulk drugs and formulations separately. In the case of India we could compile only the following table (4.3), from the Lok Sabha debates involving questions and answers on the drug industry, which shows separately the rates of return on bulk drugs and formulations. Interestingly, the table indicates higher rates of return on bulk drugs and not on formulations. Thus, out of 18 companies listed in the table, profits on turnover are higher in bulk drugs production in the case of nine companies; four companies do not report any activity on account of bulk drugs ; two companies have similar rates of return on both the categories of drugs and only three companies indicate relatively higher rates of return on formulations as compared to those on bulk drugs. The data in the table thus contradict the popular notion of a relatively higher profitability on formulations. However, a note of caution is required here. The above table measures profit rates in relation to sales turnover, which is not a very proper way to measure profitability for manufacturing firms. Profitability in manufacturing firms can be measured in relation to capital assets of capital funds. The way in which profits are measured will be crucially important so far as relative profitability between bulk drugs and formulations is concerned. The sales turnover to capital employed ratio is about 2.6 : 1 in formulations production while

TABLE 4.3

Profit Rates on Turnover of Bulk Drugs and Formulations

Sr. No.	*Name of the company*	*Percentage of profits on turnover*	
		Bulk drugs and formulations	*Formulations only*
1.	Anglo French Drug Co. Ltd.	11.70	11.70
2.	Bayer India Ltd.	12.21	8.30
3.	Burroughs Wellcome & Co. Ltd.	5.34	5.65
4.	Ciba (I) Ltd.	10.70	7.60
5.	Ethnor Ltd.	—	12.70
6.	Geoffrey Manners & Co. Ltd.	14.17	10.75
7.	German Remedies Ltd.	Loss	11.08
8.	Glaxo Laboratories Ltd.	10.36	5.47
9.	India Schering Ltd.	14.01	12.60
10.	Merck Sharp & Dohme of India Ltd.	11.00	8.00
11.	Nicholas (I) Ltd.	—	13.60
12.	Rallis (I) Ltd.	—	4.50
13.	Roche Products Ltd.	16.64	13.39
14.	Roussel Pharmaceuticals (I) Ltd.	8.52	8.52
15.	Sandoz India Ltd.	8.97	9.05
16.	Suhrid Geigy Ltd.	10.07	7.43
17.	UNI-UCB (P) Ltd.	9.50	9.00
18.	Warner Hindustan Ltd.	—	4.60

Source : Lok Sabha Debates, March 1974.

the same rate is hardly 1 : 1 in bulk drugs production.[8] Uniform profit rates measured in terms of capital employed will denote a relatively small profit rate measured in terms of sales turnover for formulations as a result of the differences in turnover to capital employed ratio. Hence the seemingly higher profitability in production of bulk drugs may not be representing a true state of affairs.[9]

Reverting to the issue of high profitability of drug companies in India, it should be pointed out that this high profitability of drug companies operating in India is not a case in isolation. The international pharmaceutical industry has always been ranked as

one of the most profitable industries in the world. In the USA (the home of the largest number of drug MNCs), for instance, the net rate of return on shareholders' investment has averaged 18 per cent since 1960 compared with all manufacturing average of 11 per cent. The after-tax rate of return on sales has averaged around 9 per cent for the drug industry, and usually less than 6 per cent for all other manufacturing industries.[10] At company level the returns on investment of some of the firms are simply remarkable. Thus, for example, in various years net rates of return on investment of 30 to 39 per cent have been reported for companies such as American Home Products, Bristol Myers, Miles Laboratories, Norwich, Schering and Searle. Carter Wallace, Roher and Smithkline have all attained profit levels of 40 to 47 per cent. After-tax returns of 52 per cent to 53 per cent have been recorded for Syntex, Marion Laboratories and A.H. Robins. Even during the severe depression years of 1930 to 1935, Upjohn had after-tax rate of return of over 30 per cent, indicating that high-profit performance of pharmaceutical companies is not a new phenomenon.[11]

It needs to be pointed out in connection with the profitability of drug MNCs that the existence of transfer pricing (see Chapter 6) reduces the reliability of these declared profits. Transfer prices are manipulated by international drug companies to show low profits in countries with relatively high tax rates and with restrictions on profit remissions. The best known case in this regard is that of Roche. Roche has always declared low profits—below 5 per cent on capital employed—in the UK, a high tax country compared to Switzerland, where the company is domiciled. Yet the Monopolies Commission found that its real profitability was over 70 per cent on capital employed for the period 1966-72, and that declared profits comprised only 12 per cent of total profits.[12] It was discovered that the prices charged for imports of chlordiazepoxide and diazepam in the UK were 4000-4500 per cent higher than alternative world market prices (which already included an allowance for profits).[13] These instances clearly indicate that drug MNCs make enormous hidden profits, thereby rendering the declared profit figures in particular and balance sheets in general less meaningful.

As mentioned earlier, the genesis of high profits accruing to pharmaceutical firms lies in the typical structure characterising the pharmaceutical markets, high concentration of sellers, stiff barriers

to entry and peculiar conditions of demand which provide pharmaceutical firms with substantial "market power". Notwithstanding this explanation, some authors attribute the high profits of the pharmaceutical industry simply to accounting mechanism. They point out that the standard accounting practice of expensing R & D outlays against current income rather than capitalising this item as an investment expected to benefit future periods, affects the profit rates. The current high rate of return on invested capital in the pharmaceutical industry is the successful investments in R & D in the late 1950s and early 1960s, investments' that are not included in the books of the company since they were primarily expensed.[14] It is, however, pointed out that if the R & D expenditure were capitalised rather than expensed, the net profit rate for drugs would appear larger, equal to or smaller in any particular year. By allowing the R & D expenditure to be expensed, the Government in fact grants the firm an indirect fiscal subsidy in the same year that the expenditure is made. When such expenditures are capitalised the benefits are spread over the years in which they are depreciated.[15]

Another explanation, rather justification, given by the industry for its high profitability refers to high risks and long gestation period of research and development. But here also the critics argue that if the claim of exceptional risk as the reason for exceptional profitability were valid, the analysis of data should show : (a) that risk and uncertainty by themselves exercised a significant influence on the profit of drug companies ; (b) that earnings fluctuated considerably round the trend and relative to less risky industries ; (c) that other sources of market power were absent, so that the level of profits only measured the competitive return on capital plus a "fair" premium for risk ; and (d) that firms which were relatively less innovative had lower rates of returns. But the evidence that exists does not support any of these propositions. An econometric analysis of the determinants of profit in the US does not show that risk is a significant variable. A detailed investigation conducted by the US government shows, on the contrary, that "the high profit experience of the drug industry is related only minimally to risk and uncertainty in a casual way . .... (It is) more closely associated with high barriers to entry of new competition.[16]

In short, therefore, "while there is some justification in the argument that drug firms conduct risky research for which they

should be compensated, there is no reason to believe that the market actually functions so as to allocate a reasonable return on the risk undertaken. It appears, on the contrary, that the leading drug companies use the notion of risk simply as a convenient excuse to prevent closer inspection and control of their real earnings."[17]

In the preceding paragraphs we dealt at some length with our first question regarding the higher profitability of drug industry compared to that of other industries. However, in the process of our ratio analysis, the answer to our second question regarding the falling profitability of drug companies also emerged, albeit partly. As we mentioned earlier, it is generally asserted that owing to a number of factors the profitability of drug companies has declined in the 70s. If we divide the 18-year period, 1960-61 to 1977-78 into two halves—1960-61 to 1969-70 and 1970-71 to 1977-78, as we did in the previous section—we do notice a slight fall in the profitability of drug companies in the second half of this 18-year period. Thus, for the first half, on an average, GP/TCE ratio for the pharmaceutical group works out to be 37 per cent against 33 per cent for the second half. As regards GP/NS ratio we notice a decline during this same period, from 18 per cent to 15 per cent, for NP/NW ratio, 16 per cent to 15 per cent and for NP/TCE ratio 15 per cent to 13 per cent. But for our three groups, barring a slight fall in GP/NS and NP/NS ratios, we do not notice any undue decline in other ratios. However, the overall picture does indicate a slight decline in the profitability of drug companies in recent years. This in fact should not be surprising since the basic aim of the DPCOs is to check any indiscriminate rise in drug prices. And if in the process the profitability of drug companies has fallen marginally, it should only be looked upon as a positive aspect of price controls, especially when, as we have noticed, the profitability of drug companies in general is higher compared to All Industries and Chemical Industry's level. Furthermore, it should also be noted that drug companies are partly able to offset any percentage decline in profitability by increasing their total sales volumes. These sales volumes when calculated for 32 pharmaceutical companies was found to have risen, at constant (1960-61) prices, more than three-fold from Rs. 3360 lakhs in 1960-61 to Rs. 13627 lakhs in 1977-78, depicting a real annual growth rate of 9.3 per cent.[18] Moreover, as we have seen in the last chapter, the industry as a whole does not show

any undue adverse impact of this marginal decline in profitability in the 70s, on the rate of capital investment and production of drugs in the country. As we have noted in the last chapter, the total capital investment in the industry has increased from Rs. 56 crores (at 1961-62 prices) in 1962 to Rs. 134 crores in 1970 and further to Rs. 180 crores in 1978, indicating an average annual growth rate of 17 per cent and 5 per cent, respectively. A relatively lower growth rate of 5 per cent in capital investment in the 70s can be attributed to several factors. Thus, there was general recession in all the industries in that decade and the drug industry was no exception to it. Moreover, as we have noticed earlier in Chapter 3, there already exists a considerable extent of unutilised capacity in the case of many essential categories of drugs produced by the industry. It should also be noted here that the rate of drugs production in the industry is faster than the rate of capital investment in it. Sixth plan estimates place the total capital investment in the industry at Rs. 720 crores from Rs. 470 crores in 1977-78. By mid-1980 fresh investment of over Rs. 100 crores had already been cleared by the government. Several large Indian and foreign companies were reported to be planning large-scale investment to step up their production.[19] An examination of total drugs production data in the last chapter has shown that the same increased from Rs. 100 crores at 1961-62 prices in 1962 to Rs. 210 crores in 1970 and further to Rs. 556 crores in 1978, indicating an average annual growth rate of 14 per cent and 21 per cent respectively. The total drug production is estimated to more than double to around Rs. 1900 crores by the end of 1982-83. In view of all these developments, the fears of adverse economic consequences of the DPCOs as envisaged by various industrial circles are quite unfounded.

IV. Drug Prices and Modus Operandi of Drug Price Controls

Our discussion thus far highlights the fact that, barring certain anomalies, the DPCOs in India have worked well and have not had any adverse impact on the growth of the industry. At the same time, a comparison between the drug prices and the general price level over last two decades shows that the former have risen less rapidly than the latter. Table 4.4 (also Figure 4.1) shows the wholesale price index of drugs and medicines and for all commodities over the period 1962-63 to 1978-79 (1961-62=100). It can

be seen that, whereas the general price level during this period rose more than two-fold, the price level for drugs and medicines merely doubled. Whether the Drug Price Control measures have been successful or not is now not in question. Two relevant issues that can be discussed are as follows :

First, is there any possibility of further reducing or at least stabilising the drug prices without causing any undue harm to the future growth of the industry ?

Secondly, how far can the existing drug price control mechanism be made more efficient within the existing framework ?

TABLE 4.4

Wholesale Price Index of Drugs and Medicines *vis-a-vis* All Commodities (1960-61=100) : 1961-62—1978-79

Year	*Drugs and Medicines*	*All commodities*
1961-62	102.0	103.0
1962-63	102.1	103.8
1963-64	103.1	110.2
1964-65	103.6	122.3
1965-66	105 2	131.6
1966-67	112.4	149.9
1967-68	121.6	167.3
1968-69	123.6	165.4
1969-70	129.8	171.6
1970-71	142.6	181.1
1971-72	145.2	191.2
1972-73	147.1	211.2
1973-74	148.3	253.0
1974-75	160.4	316.7
1975-76	177.9	313.3
1976-77	190.9	319.8
1977-78	194.4	336 5
1978-79	193.9	336.3

Sources : (a) Ministry of Petroleum, Chemicals and Fertilisers, Indian Drugs Statistics, 1979-80.

(b) H.L. Chandhok, Wholesale Price Statistics in India, Vols. I & II, 1978.

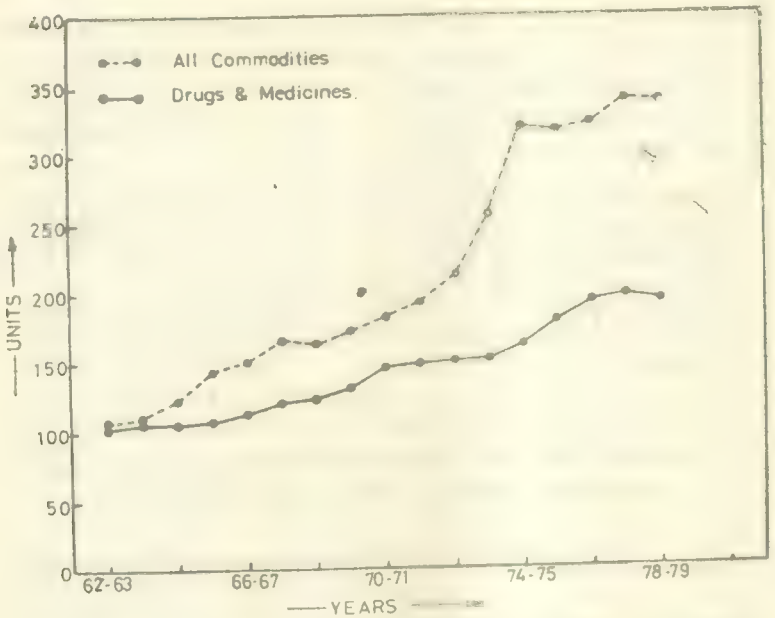


Fig. 4.1 : Wholesale price index of drugs and medicines *vis-a-vis* all commodities (1960-61=100) : 1961/1962–1978/79

In order to examine the first issue we begin with the very cost structure of drug production. Table 4.5 (also Figure 4.2) presents a breakdown of production expenditure of 52 pharmaceutical firms for the three-year period, 1975-76 to 1977-78. The table shows that manufacturing expenses account for 61 per cent of total expenses in which the share of raw materials is 48 per cent, the balance being accounted for by stores and spares (10 per cent), mainly packing materials, power and fuel, royalty and other manufacturing expenses. The second highest share in total expenses is accounted for by wages, 19 per cent. The table does not give any detailed breakdown of sales promotion expenses. But as admitted by AIMO (See Note No. 5 at the end of this chapter) sales promotion expenses account for 13 per cent of total sales of drug firms. If this be the case, then comparing it with other expenses in Table 4.5, sales promotion expenses tend to account for the third highest item of expenditure in the cost structure of drugs.

Before we proceed further it will be worthwhile to first briefly comment on the drug price fixation method adopted by the

Government. The method currently being followed for drug pricing is what is known as a 'cost-plus' pricing method. Under this method, all costs of production are covered and a mark-up-"plus" is permitted as a deliberate means to meet the selling expenses and to give the enterprise a certain amount of profit. The most notable feature of this pricing technique is that all costs incurred by a firm are certain to be recovered and with a surplus. The cost-plus pricing technique is an ideal method of price fixing in the early stages in the life of an enterprise when full measure of cost efficiency has not yet been achieved. But in the long run if the enterprise has not been able to improve its efficiency, the cost-plus will only tend to shield its inefficiency. Secondly, this pricing technique simply makes every line of production profitable. And since there is no line which is not profitable, the enterprise ceases to exercise initiatives in optimising its product mix. It is quite possible in an enterprise that some outputs are relatively expensive or the technical ability of the enterprise is low in producing them. It could thus be right for it to leave its output to others or to redirect demand into more economical outputs. It may even be worthwhile for the country to import such items. But if the 'cost-plus' pricing is followed then none of these economical measures is likely to emerge. This seems to be the case with Indian firms in the small-scale sector producing bulk drugs. The cost of production of these drugs is comparatively higher in many cases when compared with the prices of imported bulk drugs. But the latter are being continued to be priced to match the former. We will revert to this issue in a while.

As we have mentioned earlier, raw materials account for 48 per cent of total expenses incurred in the production of drugs, or for 42 per cent if we compute the figures against total production. The drug industry in India consumed raw materials worth Rs. 378 crores (42 per cent of Rs. 900 crores of total production of drugs) in 1977-78. Out of this, 80 per cent (Rs. 303 crores) worth of raw materials were indigenously produced and the balance 20 per cent (Rs. 75 crores) was imported.[20] In so far as the examination by the Bureau of Industrial Cost and Prices (BICP) of the cost-cum-technical data of local producers of bulk drugs far fixing its prices is concerned, the efforts have been amply rewarding. This can be seen from data in Table 4.6. The table shows the position of 34 bulk drugs the prices for which were declared by manufacturers

TABLE 4.5

Breakdown of Production Expenditure of 52 Pharmaceutical Firms : 1975-76 to 1977-78

(*Rs. in lakh*)

Sr. No.	*Particulars*	*1975-76*		*1976-77*		*1977-78*	
		Total	*Percentage of total expenses*	*Total*	*Percentage of total expenses*	*Total*	*Percentage of total expenses*
1.	Value of production	34,819	—	39,428	—	42,852	—
2.	Manufacturing expenses	18,846	60.80	21,098	61.02	22.871	60.97
	Of which						
	Raw materials, component etc.	14,668	47.32	16,305	47.16	17,920	47.77
	(Of which imported)	(1329)	(4.29)	(1615)	(4.67)	(2138)	(5.70)
	Stores and spares	3,178	10.25	3,535	10.22	3,567	9.51
	(Of which imported)	(11)	(Neg.)	(26)	(Neg.)	(29)	(Neg.)
	Power and fuel	716	2.31	927	2.68	1,042	2.78
	Royalty	77	0.25	98	0.28	107	0.29
	Other manufacturing expenses	207	0.67	233	0.67	235	0.63
3.	Remuneration to employees	5,942	19.17	6,462	18.69	7,082	18.88
	Of which						
	Share of high salaried class*	514	1.66	614	1.77	844	2.25
4.	Repairs to building and machinery	354	1.14	441	1.28	457	1.22
5.	Bad debts	30	(Neg.)	20	Neg.	31	Neg.
6.	Selling expenses	631	2.04	656	1.90	694	1.85
7.	Other expenses	4,385	14.15	5,014	14.50	5,485	14.62
	Of which						
	Rent	264	0.85	296	0.86	294	0.78
	Rates and taxes	83	0.27	138	0.40	146	0.39
	Advertisement	686	2.21	806	2.33	840	2.24
	R & D	107	0.35	136	0.39	156	0.42
8.	Depreciation provision	690	2.23	749	2.17	824	2.20
9.	Other provisions (other than tax and depreciation)	119	0.38	134	0.39	67	0.18
10.	Total expenses	30,997	—	34,574	—	37,511	—

* Employees drawing Rs. 36,000 p.a. or more.

Source : *RBI Bulletin*, May 1980, "Finances of Medium and Large Public Limited Companies, 1977-78", pp. 298-410.

Fig. 4.2 Percentage breakdown of production expenditure of 52 phamaceutical firms : 1977-1978.

and fixed by the BICP. It can be seen that price reduction made possible by the BICP's examination of cost structure of these drugs ranges anywhere from 10 per cent (Searle's Pheniramine Maleate) to 80 per cent (Phine Kimikals Ethisterone IP). The average percentage reduction for all the 34 drugs works out to be 40 per cent. The basic fact this table highlights is that the cost structure of bulk drugs production in the country requires a careful and continuous attention if the prices of end products are to be controlled.

Besides BICP's handling of costs of indigenously produced bulk drugs, it would also be fruitful if attention is paid to the costs of imported bulk drugs and intermediates. At present STC is canalising around 60 per cent of total imports of drugs. The balance 40 per cent is directly imported by private firms, especially foreign firms. As regards the cost of drugs imported by STC is concerned, they tend to be greatly enhanced owing to heavy customs duty, the handling and postal expenses and STC's own charges and a margin of profits. And then the prices of these

TABLE 4.6

Price of Bulk Drugs Declared by Manufacturers and Approved by BICP

Sr. No.	*Name of the bulk drug*	*Unit*	*Company*	*Declared*	*Fixed*	*Percentage reduction*
1.	*2*	*3*	*4*	*5*	*6*	*7*
1.	Frusemide	Kg.	Hoechst	2,913	1,741	40.23
2.	Sulphamethoxazole	Kg.	Roche Products	1,130	517	54.25
3.	Trimethoprim	Kg.	Burroughs Wellcome	5,950	2,587	56.52
4.	Absorbed diphtheria and tetanus vaccine	Ltrs.	Glaxo	700	400	42.86
5.	Chlorpheniramine Maleate	Kg.	Searle I. Ltd.	1,350	1,133	16.07
6.	Pheniramine Maleate	Kg.	Searle I. Ltd.	900	809	10.11
7.	Tricholine citrate solution	Kg.	Franco Indian Pharmaceuticals	100	42	58.00
8.	(1) Sodium citrate IP, (2) Potassium citrate and (3) Sodium acid citrate	Kg.	Suchen Labs	30	16	46.67
9.	Oxyphentutazone	Kg.	Synthochem	2,500	1,002	59.92
10.	Hydrocortisone IP	Gm.	Phine Kemikals	19	15	21.05
11.	Hydrocortisone Acetate IP	Gm.	Phine Kemikals	19	16	15.79

(Contd.)

TABLE 4.6 (Contd.)

1	2	3	4	5	6	7
12.	Hydroxy progesterone caproate USP	Gm.	Phine Kemikals	10	7	30.00
13.	Testorone propionate IP	Gm.	Phine Kemikals	10	6	40.00
14.	Ethisterone IP	Gm.	Phine Kemikals	22	4	81.82
15.	Phenacetin	Kg.	Amar Chemicals	111	65	41.44
16.	Clofibrate	Kg.	Ranbaxy	450	400	11.11
17.	Ampicillin anhydrous	Kg.	HAL	2,713	1,952	28.05
18.	Maprobamate IP	Kg.	Pharmasyuth Chemicals	350	157	55.14
19.	Estradiol benzoate	Gm.	Phine Kemikals	115	30	73.91
20.	Antipyrine	Kg.	Nuchem Plastics Ltd.	160	100	37.50
21.	Oxyphenbutazone BP	Kg.	Gauri Fine Chemicals	1,200	1,002	16.00
22.	Sulphaphenazole	Kg.	IDPL	271	184	32.10
23.	Di-phenyl-hydantoin sodium	Kg.	Synthochem	382	261	31.68
24.	Calcium sennasoid 100% pure	Kg.	Alembic	2,400	1,737	27.63
25.	Terpin hydrate IP	Kg.	Bhavana Chemicals	50	32	36.00
26.	Clofibrate BP	Kg.	Pharma Indiana Labs.	785	400	49.04
27.	Menodione IP	Kg.	Pharma Indiana Labs.	1,125	442	60.71
28.	Monadione Sodium Bisulphate	Kg.	Pharma Indiana Labs.	1,575	430	72.70
29.	Diphenhydramine Hcl BP	Kg.	Vaziralli Pvt. Ltd.	300	251	16.33
30.	Phenformin Hcl BP	Kg.	Vaziralli Pvt. Ltd.	400	303	24.25
31.	Metronidazole benzoate	Kg.	Unichem Labs.	948	600	36.71
32.	Metronidazole	Kg.	Uniloids Ltd.	600	460	23.33
33.	Di-iodohydrozyquinoline	Kg.	Albert David	153	121	20.92
34.	Iodo-chlorohydrocyquinoline	Kg.	Albert David	172	134	22 09

Note : BICP fixes the price on the basis of following criteria : (a) cost-cum-technical examination of data furnished to it by the company, (b) on par with the prices of other companies including public sector units producing similar drugs.

Source : Derived from Lok Sabha Debates, August 1978.

drugs have to be matched with the relatively higher prices of indigenously produced bulk drugs. Table 4.7 shows as to how all these factors ultimately escalate the pooled prices of bulk drugs which the local users pay. The table shows the c.i.f. prices and the pooled prices of nine bulk drugs fixed by STC in 1974-75. The difference between the two sets of prices, as can be seen, is in most cases more than 100 per cent. If a large portion of bulk drugs distributed by STC is going into the production of formulations in categories I and II of DPCO 1979, then they are certain to inflate the total costs, and lower mark-ups allowed on these

TABLE 4.7

CIF Prices and Pooled Prices of Bulk Drugs Fixed by STC in 1974-75

Sr. No.	*Name of the drug*	*CIF price*	*Pooled price*	*Percentage difference between 3 and 4*
1	*2*	*3*	*4*	*5*
1.	Analgin	56.00	175.02	212.54
2.	Amydopyrine	59.33	132.43	123.21
3.	Folic acid	585.00	1,527.02	161.03
4.	Sulphazunidine	80.00	115.61	44.51
5.	Phenobarbitone	140.60	276.11	96.38
6.	Vitamin B_1	280.00	592.48	111.60
7.	Streptomycin sulphate	250.26	343.00	37.06
8.	Vitamin B_2	450.00	935.68	107.93
9.	Chloramphenicol powder	480.00	646.00	34.58

Source : Lok Sabha Debates, February 1975.

categories of drugs will be of little use in controlling the prices of ultimate end-products. There is also some evidence to show that the STC's own profit margin on drugs which it canalises to local users is very high. Table 4.8 shows the pre- and post-revision prices of 17 bulk drugs fixed by the STC in 1976. It can be seen that upto 40 per cent reduction in the prices of most of the bulk drugs was made possible after the BICP recommended this

reduction to the STC. An important point which ought to be highlighted here concerns the matching of prices of imported raw materials with the prices of indigenously produced raw materials. If a large number of lower prices of imported raw materials are being raised to match the higher prices of indigenously produced raw materials, owing to their higher cost of production, then it is imperative to identify the causes responsible for this higher cost of production and to adopt measures to improve the cost efficiency of local producers of these bulk drugs. Such a step is essential, keeping in view the higher (42 per cent) share of raw materials in the production cost of drugs.

TABLE 4.8

Prices of Bulk Drugs Reduced by STC in 1976

Sr. No.	*Name of the drugs*	*Pre-revision price Rs./Kg.*	*Post revision price Rs./Kg.*	*Per cent decline*
1.	Ampicillin Anhydrous	2,030	1,540	24
2.	Ampicillin sodium	1,670	1,300	22
3.	Ampicillin trihydrate	1,425	1,105	22
4.	Chloramphenicol palunitate	670	522	22
5.	Chloramphenicol powder*	646	524	19
6.	Chloramphenicol sodium succinate	1,060	748	29
7.	Indomethacyin	1,316	816	38
8.	Calcium pantothenate	160	123	23
9.	Narcotine	410	244	40
10.	Phenobarbitone*	276	173	37
11.	Vitamin B-6	665	551	17
12.	Erythromycin Stearate	1,482	1,300	12
13.	Analgin*	175	155	11
14.	Oxytetracycline	950	729	23
15.	Diloxamide furoate	667	450	33
16.	Tartaric acid	29	21	24
17.	Tetracycline hol.	850	560	24

* Pooled price

Source : Lok Sabha Debates, January and August 1976 and July 1977.

As regards the 40 per cent of imported raw materials being dealt with exclusively by private sources, there is evidence to show that the foreign companies indulge in transfer pricing practices (see Chapter 6). This in fact is a universal phenomenon of MNCs' operations in host countries. A way to check the practice of transfer pricing of foreign drug companies operating in India would be to entrust to the BICP, or to a similar organisation, the task of comparing the invoice prices of drugs imported by these firms with the standard international prices.[21]

It should be noted in passing that the customs duty currently being charged on imported bulk drugs and formulations varies from 25 per cent to 120 per cent.[22] A reduction in the same is certain to make a dent on the selling prices.

Finally, some comments are called for on the sales promotion expenses of drug firms—13 per cent on sales promotion is certainly high. If some statutory limit is put on these expenses the reduction in them is certain to increase the overall profitability allowed to drug firms.

As regards the question of making the existing drug price control mechanism more efficient, the central body, BICP, is currently engaged in the enormous task of maintaining an up-to-date record of all the relevant information regarding production, stocks, costs, sales, profitability, availability of raw materials etc., and the ultimate task of fixing the prices of drugs. In order that this central body operates more efficiently, it should be provided with more facilities and independence. It should, however, be mentioned in passing that a careful scrutiny of four categories of drugs evolved by the government for the purpose of price fixation is perfect. But some revisions in the form of higher mark-ups would of course be necessary in due course.

Summary

An examination of drug price control measures revealed that, despite certain anomalies in these measures, they have worked well to keep the drug prices under control without causing any undue harm to the profitability and the growth of the industry. The profitability of the pharmaceutical industry which can be linked to their substantial 'market power' is found to be high when compared with the profitability levels of All Industries and Chemical Industry. However, the ratio analysis indicates a slight decline in profitability of pharmaceutical companies in recent years. But this has in no way affected the growth of the industry. An analysis of inter-group performance for our three groups of drug companies shows that the medium-sized companies have the highest profitability rates, followed by those of the medium and small-sized companies. Available data indicate that rates of return are higher on bulk drugs and not on formulations, as is generally held. A careful examination of drug prices shows that if the drug prices are to be kept under continuous control, a careful watch on the prices of indigenously produced and also on imported bulk drugs is required. An important issue for investigation is the causes which contribute to escalating production costs of bulk drugs produced by local manufacturers as compared to the prices of similar drugs imported by the STC. As regards the possibility of reducing the drug prices, a reduction in the central excise, customs duties and other levies and also in the sales promotion expenses of drug firms could make a dent on the drug prices. The BICP, which is in charge of fixing the drug prices, could be given more facilities and leverage in its operations.

Notes and References

1. Tariff Commission, Report on the Fair Selling Prices of Drug and Pharmaceuticals, 1968.
2. See for instance, V. L. Mote and H.N. Pathak, 'Drug Price Control Order, an evaluation', *Economic and Political Weekly*, July 15, 1972, pp. 1369-1379.
3. Ministry of Petroleum and Chemicals, GOI, Report of the Committee on Drugs and Pharmaceutical Industry, 1975.
4. AIMO's view on Drug Policy, Indian Drugs and Pharmaceutical Industry, Vol. XII, May-June 1977.
5. According to AIMO the average expenses the manufacturer has to provide out of the mark-up allowed to him are as follows :

		Percentage on mark-up
(A) Trade Discount		
Retailer	12%	
Stockist/Distributors	8%	20%
(B) Sales Promotion		
Salaries	4%	
Travelling	3%	
Literature	3%	

Samples	2%	
Advertisement	1%	13%
(C) Transport		2%
(D) General overheads, including administrative expenses, interest rates etc.		8%
	Total	43%

6. Lok Sabha Question Answers, 19th November, 1980.
7. Hoechst, Pfizer, Cynamid, Geoffrey Manners, Wyeth and Griffon Labs.
8. Ministry of Petroleum and Chemicals, GOI, Report of the Committee on Drugs and Pharmaceutical Industry, 1975, p. 181.
9. For instance, 10 per cent profits on capital employed would be equivalent to 3.85 per cent profits on sales turnover $(10 \div 260 \times 100)$ in the case of formulations, but it would be a straight 10 per cent in the case of bulk drugs.
10. United Nations, *Transnational Corporations and the Pharmaceutical Industry*, 1979, p. 54.
11. *Ibid.*, p. 55.
12. Sanjay Lall, 'Major Issues in Transfer of Technology to Developing Countries : A Case Study of the Pharmaceutical Industry', UNCTAD, 1975, p. 28.
13. *Ibid.*
14. Schwartzman, David, *Innovation in the Pharmaceutical Industry*, Baltimore, Maryland, The John Hopkin Uni. Press, 1976.
15. UN, 1979, op. cit., p. 57.
16. R.C. Parker and W.H. Kelly, "Profitability in the Drug Industry : A Result of Monopoly or a Payment for Risk ?" in Federal Trade Commission's Economic Papers, 1966-69, Washington D.C. U.S. Government, p. 165. Cited in Sanjay Lall, 1975, op. cit., p. 36.
17. Sanjay Lall, 1975, op. cit., p. 36.
18. Calculated from RBI, Financial Statistics of Joint Stock Companies, various issues.
19. Some of the prominent drug firms planning fresh investment are : Glaxo, Pfizer, Wyeth, Abbot, Roche and Anglo French, *Economic Times*, 2-5-1980.
20. Assuming all the imports in that year were raw materials.
21. We suggest that among other things it should be made obligatory on the part of the companies to disclose in their annual accounts, the total quantum, the prices and the destinations of their trade transactions.
22. The range of customs duty on imported drugs is as follows :
    (i) Customs duty on bulk drugs varies from zero to 60 per cent ofc.i.f. plus 15 per cent *ad valorem* on 10 per cent of c.i.f. prices.
    (ii) Customs duty on drug intermediates varies from 25 per cent to 75 per cent on 101 per cent of c.i.f. prices.
    (iii) Customs duty on drug formulations varies from zero to 120 per cent on 101 per cent of c.i.f. prices.

APPENDIX

TABLE 4.1

Maximum Pre-tax Return on Sales Turnover (Exclusive of Sales Duty) Allowed to Drug Firms

	Pre-tax return on sales turnover exclusive of excise duty
(A) Large units with turnover exceeding Rs. 6 crores per annum	
(a) having no basic drug manufacturing activity nor any research activity	8%
(b) having basic manufacturing activity corresponding to 5% or more of turnover but no research activity	9%
(c) having basic drug manufacturing activity at 5% or more of the turnover and engaged in approved R and D work relating to new drugs	10%
(B) Medium size units with turnover between Rs. 1 crore and Rs. 6 crores per annum and	
(a) having no basic drug manufacturing activity nor research activity	9%
(b) having basic drug manufacturing activity corresponding to 5% (or more) of turnover but not research activity	11%
(c) having basic drug manufacturing activity at 5% or more of turnover and engaged in approved R and D work related to new drugs	13%

	Pre-tax return on sales turnover exclusive of excise duty
(C) Other units with turnover of less than Rs. 1 crore per annum	
(a) having only formulation capacity	12%
(b) having basic drug manufacturing activity at 5% or more of turnover	13%

TABLE 4.2

Profitability of All Industries, Chemical Industry, *vis-a-vis* Drug Industry : 1960-61—1977-78

Ratio and Group	*1960-61*	*1961-62*	*1962-63*	*1963-64*	*1964-65*	*1965-66*	*1966-67*	*1967-68*	*1968-69*	*1969-70*
(*1*)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(*10*)	(*11*)
GP/TCE										
All Industries	17.3	17.3	17.8	18.8	18.7	18.3	18.0	16.2	15.9	18.0
Chemicals	22.4	21.0	20.0	21.2	23.1	25.9	26.1	21.6	20.6	24.7
Medicines and Pharmaceuticals	31.0	29.2	27.7	33.4	36.9	45.5	44.1	39.8	40.4	46.3
Our Group I	—	—	—	—	—	—	—	—	—	—
Our Group II	—	—	—	—	—	—	—	—	—	—
Our Group III	—	—	—	—	—	—	—	—	—	—
Groups I-III	—	—	—	—	—	—	—	—	—	—
GP/NS										
All Industries	10.6	10.5	10.6	10.8	10.6	10.0	10.5	9.2	8.8	9.6
Chemicals	16.2	16.1	15.8	16.3	16.3	15.4	16.0	13.5	12.8	14.8
Medicines and Pharmaceuticals	13.8	14.1	14.1	16.5	16.8	21.2	20.8	18.5	18.5	20.2
Our Group I	—	—	—	—	—	—	—	—	—	—
Our Group II								—	—	—

(*Contd.*)

TABLE 4.2 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Our Group III	—	—	—	—	—	—	—	—	—	—
Groups I-III	—	—	—	—	—	—	—	—	—	—
NP/NW										
All Industries	11.0	10.0	8.7	9.5	9.3	8.7	9.1	7.3	7.0	9.5
Chemicals	14.7	13.4	11.7	10.9	12.5	12.1	13.5	11.0	9 6	13.9
Medicines and Pharmaceuticals	17.2	16.0	11.9	12.7	16.3	18.1	17.1	14.8	16.9	19.3
Our Group I	—	—	—	—	—	—	—	—	—	—
Our Group II	—	—	—	—	—	—	—	—	—	—
Our Group III	—	—	—	—	—	—	—	—	—	—
Groups I-III	—	—	—	—	—	—	—	—	—	—
NP/TCE										
All Industries	9.1	8.2	7.1	7.7	7.4	7.0	6.8	5.4	5.2	7.1
Chemicals	3.2	2.9	2.1	2.2	2.9	9.9	10.2	7.9	6.8	9.8
Medicines and Pharmaceuticals	15.7	14.4	10.8	11.4	14.8	16.6	15.5	13.5	15.4	17.9
Our Group I	—	—	—	—	—	—	—	—	—	—
Our Group II	—	—	—	—	—	—	—	—	—	—
Our Group III	—	—	—	—	—	—	—	—	—	—

Groups I-III	—	—	—	—	—	—	—	—	—	—
NP/NS										
All Industries	5.6	5.0	4.2	4.4	4.2	4.1	4.0	3.1	2.9	3.8
Chemicals	2.3	2.2	1.7	1.7	2.0	5.9	6.3	5.0	4.2	5.9
Medicines and Pharmaceuticals	7.0	7.0	5.5	5.6	6.7	7.7	7.3	6.3	7.1	7.8
Our Group I	—	—	—	—	—	—	—	—	—	—
Our Group II	—	—	—	—	—	—	—	—	—	—
Our Group III	—	—	—	—	—	—	—	—	—	—
Groups I-III	—	—	—	—	—	—	—	—	—	—
N/P to TSC										
All Industries	18.7	17.3	15.3	17.1	17.4	15.9	15.5	12.2	11.9	16.3
Chemicals	5.2	5.0	4.0	4.4	5.9	18.8	20.7	17.2	14.8	21.1
Medicines and Pharmaceuticals	27.0	26.8	20.1	22.9	31.4	36.3	31.9	28.1	33.7	37.3
Our Group I	—	—	—	—	—	—	—	—	—	—
Our Group II	—	—	—	—	—	—	—	—	—	—
Our Group III	—	—	—	—	—	—	—	—	—	—
Groups I-III	—	—	—	—	—	—	—	—	—	—

(*Contd.*)

TABLE 4.2 (Contd.)

Ratio and Group	*1970-71*	*1971-72*	*1972-73*	*1973-74*	*1974-75*	*1975-76*	*1976-77*	*1977-78*	*1960-61 to 1969-70*	*1970-71 to 1977-78*	*1960-61 to 1977-78*
(1)	*(12)*	*(13)*	*(14)*	*(15)*	*(16)*	*(17)*	*(18)*	*(19)*	*(20)*	*(21)*	*(22)*
GP/TCE											
All Industries	19.2	19.7	19.3	21.3	25.6	21.0	22.0	22.3	17.6	21.3	19.3
Chemicals	21.6	22.8	22.9	23.4	30.0	26.3	27.8	28.4	22.7	25.4	23.9
Medicines and Pharmaceuticals	38.0	36.0	35.7	34.1	32.7	36.0	42.4	42.8	37.4	32.5	35.2
Our Group I	40.2	34.8	36.9	31.4	35.4	37.6	43.9	39.4	—	37.4	—
Our Group II	48.0	53.8	55.2	52.6	45.4	55.5	58.4	52.9	—	52.7	—
Our Group III	38.0	39.9	38.6	37.1	30.4	36.1	40.8	43.3	—	38.0	—
Groups I-III	40.1	42.4	41.9	39.9	34.6	41.2	45.5	45.2	—	41.4	—
GP/NS											
All Industries	9.9	10.3	9.7	10.7	11.4	9.2	9.0	9.0	10.1	9.9	10.0
Chemicals	13.8	15.7	15.3	15.2	16.6	14.4	14.1	14.2	15.3	14.9	15.1
Medicines and Pharmaceuticals	17.5	16.1	15.3	14.4	12.9	13.0	14.2	14.2	17.5	14.7	16.2
Our Group I	15.6	14.5	14.1	12.6	12.8	12.0	13.4	12.5	—	13.5	—
Our Group II	18.8	20.4	20.0	19.4	16.5	18.1	18.4	17.3	—	18.6	—
Our Group III	22.5	18.7	18.8	17.7	13.8	13.3	14.9	15.4	—	15.4	—
Groups I-III	20.7	18.6	18.5	17.5	14.4	14.4	15.6	15.5	—	16.9	—
NP/NW											
All Industries	10.1	10.8	10.4	11.6	13.7	8.2	7.9	8.8	9.0	10.2	9.5
Chemicals	13.5	16.5	16.3	14.9	19.3	13.5	13.8	14.6	12.3	15.3	13.7
Medicines and Pharmaceuticals	15.5	16.2	15.5	14.4	12.8	12.0	14.6	16.5	16.0	14.7	15.4
Our Group I	19.4	19.5	17.0	17.1	14.9	10.7	15.3	14.6	—	16.1	—
Our Group II	19.5	21.8	18.8	18.8	14.9	19.6	20.1	20.0	—	19.2	—
Our Group III	15.9	18.6	17.8	15.3	12.9	12.4	14.6	16.8	—	15.5	—
Groups I-III	16.8	19.4	17.9	16.3	13.6	14.0	16.0	17.3	—	16.4	—
NP/TCE											
All Industries	8.1	7.6	7.3	8.2	9.9	5.7	5.4	5.9	7.1	7.3	7.2
Chemicals	9.6	10.6	11.1	10.7	14.6	9.7	10.1	10.9	5.8	10.9	8.1
Medicines and Pharmaceuticals	14.4	13.9	13.2	12.1	10.8	10.0	12.3	14.0	14.6	12.6	13.7
Our Group I	15.0	14.4	12.9	12.2	12.0	8.5	11.9	11.2	—	12.3	—
Our Group II	17.4	19.7	17.1	16.9	12.8	17.3	18.0	18.0	—	17.2	—
Our Group III	14.9	17.3	16.1	13.8	11.9	11.4	13.5	15.7	—	14.3	—
Groups I-III	15.4	17.5	15.9	14.3	12.1	12.6	14.4	15.7	—	14.7	—

(*Contd.*)

TABLE 4.2 (Contd.)

(1)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
NP/NS											
All Industries	4.5	4.0	3.7	4.1	4.4	2.5	2.2	2.4	4.1	3.5	3.8
Chemicals	6.9	7.3	7.4	7.0	8.1	5.3	5.2	5.4	3.7	6.6	5.0
Medicines and Pharmaceuticals	6.7	6.2	5.6	5.1	4.3	3.6	4.1	4.6	6.8	5.0	6.0
Our Group I	5.8	6.0	5.0	4.9	4.4	2.7	3.6	3.6	—	4.5	—
Our Group II	6.8	7.5	6.2	6.2	4.7	5.6	5.7	5.9	—	5.9	—
Our Group III	8.8	8.1	7.9	6.6	5.4	4.2	4.9	5.6	—	6.4	—
Groups I-III	7.9	7.7	7.1	6.3	5.1	4.4	4.9	5.4	—	6.1	—
N/P to TSC											
All Industries	20.1	19.4	19.3	22.6	28.7	17.0	15.8	17.7	15.8	20.1	17.7
Chemicals	23.8	27.4	30.6	30.4	42.6	28.4	29.2	31.3	11.7	30.5	20.0
Medicines and Pharmaceuticals	32.2	33.0	32.1	32.0	28.2	24.2	28.0	31.1	29.5	30.1	29.8
Our Group I	30.2	34.1	33.2	36.6	32.2	20.1	29.3	29.8	—	30.7	—
Our Group II	39.9	51.4	47 6	51.8	40.6	47.5	47.7	52.5	—	47.4	—
Our Group III	36.4	39 6	39.7	35.6	29.0	25.4	28.7	30.3	—	33.1	—
Groups I-III	36.4	41.4	40.5	39.0	31.7	29.5	32.8	34.5	—	35.7	—

Source : Calculated from RBI, Financial Statistics of Joint Stock Companies, various issues.

5

Financial Structure of Sources and Uses of Funds for Drug Multinationals in India

THIS chapter is divided into three sections. In the first section is presented a general structure of the sources of funds for transnational corporations. In the second section this general structure of sources of funds is examined against empirical data on the sources of funds for drug MNCs in India to see if there exist any behavioural differences between the two structures. In the process are examined the pattern of capital structure and capital investment, and profit appropriation policies of the drug MNCs in India. The third section deals with the pattern of uses of funds by these corporations.

General Structure of Sources of Funds for MNCs

Industry requires funds for the acquisition of fixed as well as current assets. The varied nature of these assets demands that an enterprise have adequate finance for various time periods depending upon what type of assets the enterprise acquires with the funds. Fixed assets like plant, buildings and furniture generally have an estimated life, expressed in a certain number of years. The cost of these assets is deemed to be recovered through depreciation funds over the life period of the asset. It is well known that these real assets play a productive role in the growth of an industrial enterprise and this is a major stimulus for that enterprise to incur a variety of liabilities which take financial forms. The central question before the enterprise of this type is how to balance these two processes. Fixed assets which by definition remain permanently

with the enterprise are usually financed by long-term loans and share capital. The financing of current assets like inventories and receivables calls for short-term finance because these assets are supposed to be converted into cash within the operating cycle of the business. An operating cycle is defined as "the average time intervening the production process and the final cash realisation."[1] In other words, it is the period between buying raw materials and realising cash from sales.

Sources of funds for a company may be broadly classified into two groups, *viz.*, (a) internal sources, and (b) external sources. Internal sources comprise paid-up share capital, reserves and surpluses and various provisions. External sources can be subdivided into two : local sources and foreign sources. Local sources include raising of funds by way of fresh issue of shares in local markets, borrowing from banks, public, government and private agencies and local companies. Trade dues and other current liabilities and miscellaneous non-current liabilities are also included in this source. Foreign sources include parent organisation, sister subsidiaries, international banks and markets.

The choice of a source to raise the necessary finance depends on a number of factors. These include the relative cost of borrowings from various sources, availability and suitability to borrowers' requirements, repayment terms and conditions regarding the principal and the rate of interest, and company's own policies towards the raising of finance from various sources. Thus, for instance, a successful enterprise can easily raise additional finance for expansion purposes by way of fresh issues of shares. This source carries an added advantage in the sense that the costs, i.e., the dividends are tied up with the profits of the concern. This means the flow liability on account of fresh issue of share capital is uncertain and not fixed as in the case of loans from financial institutions and the public. This option turns out to be flexible because the rate of dividend can be adjusted, depending upon the fluctuating fortunes of the company concerned. However, despite these advantages, the company may still prefer to raise external finance, say, by way of long-term loans which carry a fixed rate of interest and have to be paid at the year-end, irrespective of company's financial performance. The management of the concerned company may opt for this source if it does not want any further dilution of ownership, in which case the fixed burden would

be preferable to the floating burden. Further, as interest cost unlike dividends is exempted from corporate tax, the real cost of long-term borrowings is considerably less. Other factors influencing the choice of a source of a finance would be the nature of the industry, size of the company, market conditions, and various policy measures like dividend and plough-back policies pursued by the company from time to time.

Internal Sources

Internal financing strategies which take the form of share capital (capitalised part), reserves, and provisions are primarily a function of total amount of profits generated by the company and the plough-back policies pursued by it from time to time. The amount of profits earned are governed by a complex gamut of endogenous factors (e.g., proper use of labour and material, the skills of the marketing divisions of the company and the like) and exogenous factors (e.g., the level of demand for the company's product, the form of market set-up in which it is operating and the like). Out of the total income generated are met expenditures under different heads including interest payables and tax provisions. The residual is then distributed between dividends and retained earnings. Here the company is faced with a kind of intertemporal choice between present income to the shareholders and the future expansion of the company. In some cases where profitability is high, the ploughing back objective can be pursued after abundantly satisfying the shareholders. There are many managements who find the alternative of ploughing back quite attractive because it ensures continuing control on the finances of the company. The retention of profits in the business is reflected in an increase in net worth on the sources side of the flow of funds sheet and in the assets on the uses side. The higher the proportion of profits retained year after year, the faster will be the growth of reserves and less would be the reliance on outside funds. Such companies will have a higher frequency of bonus issues, implying a quicker capitalisation of reserves. This is the method by which the shareholders who stay with the company are rewarded. The sacrifice they make in accepting relatively low dividend rates are after all not in vain. Favourable tax treatment of capital gains *vis-a-vis* income, if any, becomes an additional advantage to the shareholders in the process. Besides these methods of financing

investment in an enterprise, there exist a number of provisions for which funds are earmarked every year and which can be made use of in the days of financial stringency.

Internal funds usually represent an unencumbered source of funds available to finance firms' expansion programmes. But although firms usually place heavy reliance on this source, almost all the companies resort to external financing at one time or the other, especially in circumstances where frequent and substantial addition to assets are required and where internally generated funds fall short of the needs of the expanding enterprises.

External Sources

As mentioned earlier, a company can raise funds externally in local markets by way of fresh issue of shares and/or by borrowing from local private and puplic agencies. Furthermore, parents, sister subsidiaries, international banks and markets also serve as a source of external finance from foreign sources. The pros and cons of these sources of finance are discussed below.

A company can raise funds by floating fresh shares in the national market. Shares can also be floated in the international markets, thereby inviting a higher level of international participation. But wherever the affiliates float fresh issues, the parents usually would subscribe to a portion of these issues. This is done primarily to maintain their hold on the subsidiary. For, any fall below fifty per cent in the equity of the subsidiary could mean a potential danger of transfer of control to the local shareholders. In order to avoid this, the parents always try to have a higher share of equity holding in their affiliates. It was pointed out in the first chapter that one of the basic characteristics of MNCs is their majority holding in the equity of their affiliates in host countries. Data for the US and UK subsidiaries were quoted to show that on an average respectively 85 per cent and 86 per cent of their affiliates in developed countries and 81 per cent and 76 per cent of their affiliates in developing countries are majority owned. Theoretically, the raising of capital through the medium of local issues in different countries could be a very desirable method, especially when the home market is not large enough to absorb the additional issue of shares. In practice, however, there could be restrictions on the transfer of capital from one country to another.

Financing through local borrowings in host countries is a most common and widespread practice of raising funds followed by MNCs all over the world. There are a number of advantages associated with this practice. First, the local borrowings are completely insulated from the question of devaluation, because the receipts and payments of a loan are denominated in local currency. As against this, a foreign loan denominated in foreign currency will involve a much larger payment in terms of local currency in case this currency is devalued. Therefore, in order to avoid such unanticipated losses, the subsidiaries also very often on the eve of devaluation hasten up the process of repayment of their foreign loans, or speed up the payment of dividends or both. Secondly, local borrowings often carry a lower rate of interest than from alternative sources. Thirdly, the reason behind heavy reliance on local borrowings is that many host countries such as Japan restrict the amount of funds that the foreign firms can bring in. This is because a large flow of funds from abroad could lend the subsidiary a competitive advantage over the local firms. It could also impede the government's control over its money markets.[2]

Out of the various ways of local borrowings, banks are said to serve as a potential source of funds, and MNCs rely on a number of banks for their requirements instead of just one bank. Not only do foreign companies characteristically use bank borrowings for at least a part of their funds, they may depend upon them as the only outside source of finance other than trade credit. Several factors count for this widespread use. Firstly, in some countries no choice is possible since they are the only intermediates available. Secondly, in comparison to US institutions, they often grant loans on a much smaller equity base. Commonly, they play a key part in obtaining suppliers and third-country credits for the firm. Finally, very often local banks serve as a source of long-term finance, for short-term loans are usually renewed.[3]

The importance of bank credit for MNCs has been highlighted in a study of sources of funds for 115 large foreign subsidiaries—90 US and 25 European, operating in the UK. The study showed that bank credit accounted for the second highest source of finance after retained earnings and depreciation allowances (Table 5.1). Foreign subsidiaries usually carry an advantage over the local companies in obtaining bank credit, since

TABLE 5.1

Sources of Finance for 115 Foreign Subsidiaries in the UK 1966-67

(*Percentage*)

	115 subsidiaries	*90 US subsidiaries*	*25 European subsidiaries*
Foreign	19.3	8.8	28.0
Issued capital	7.5	4.4	8.6
Intra-co-liabilities	11.8	4.4	19.4
Host Country	80.6	91.4	72.1
Liquid assets	2.2	2.2	2.2
Long-term loans	7.5	7.5	8.6
Bank credit	11.8	11.8	11.8
Retained earnings and depreciation allowances	59.1	69.9	49.5

Source : M.Z. Brooke and H. Lee Remmers, *The Strategy of Multinational Enterprise : Organisation and Finance*, London, Longman, 1970, p. 55.

security which is of vital importance can easily be furnished by a third party or a foreign bank on behalf of the subsidiaries. The typical example of this situation is the newly established and yet unprofitable subsidiary which obtains finance from local banks whereas, a domestic company (without such parent backing) would not.[4]

Another potential source of external finance from abroad is the parent company herself. The interest of the parent in furnishing loans to its affiliate lies in the fact that the returns to it are fixed and free from fluctuations in the affiliate's profits. Secondly, a loan can be converted into equity as and when required. But in order that the parent could raise finance for its affiliates, that home capital market should be large enough to be tapped successfully. Secondly, many countries such as the US, UK, France and several western European countries place restrictions on the transfer of capital to other countries.

In addition to cash remittances, a parent may also assist its subsidiary in kind by furnishing her with a plant or machinery in lieu of an equity or a loan. All unpaid charges by affiliates, be they on account of inventories received, unpaid dividends, unpaid accrued charges for services received such as royalties, know-how fees or interest also add to the subsidiary's cash flows. To complicate the matter further, a subsidiary may receive funds from its parents through favourable transfer pricing practices on its intra-company transactions of goods and services. While this does not show up explicitly in the accounts, it nevertheless increases the subsidiary's cash flows.[5]

Sister subsidiaries like their parents can serve as a potential source of finance for their fellow subsidiaries. Many parents especially direct their subsidiaries to transfer funds to their sister subsidiaries if it is expected that the currency of the country of the debtor affiliate is on the verge of devaluation, the reason being that after devaluation the creditor concern would get back much more than what it would have lent. The letting out of excess funds by the creditor affiliates would be more desirable if the taxation rates are lower in the debtor affiliate's country, with the marginal productivities being the same between the two countries. The entire company debt of this sort could reduce the impact of taxation, thereby increasing the return on investment to the parent concern. However, owing to complexities involved, the transaction of funds between affiliates does not occur frequently.

International markets, especially the Euro-currency credits, constitute a potential source of both short-term and long-term funds for MNCs. But the available data show that though international credit and capital markets have expanded very rapidly in recent years, they do not provide a particularly large reservoir of funds. For instance, the total Euro-currency loans taken up in the period 1964-68 amounted to some $ 650 million annually and the Euro-bond to some $ 1460 million annually. The two markets together thus offered annually some $ 2000 million of short- and long-term capital. As against this, the financing requirements of international companies stood at some $ 7000 million annually during 1964-68 for capital exports from parent company to their subsidiaries and some $ 18500 million annually for local long- and short-term borrowings by subsidiaries in the countries in which they were operating.[6]

In the preceding sections we reviewed the pros and cons of various internal and external sources of finance open to MNCs. As already mentioned, the suitability of any particular method of financing would depend on different factors for different firms. For instance, subsidiaries with sufficient internally generated funds may tend to rely less on outside finance and *vice versa*. And the decision of firms relying on external finance would be affected by such factors as the rate of interest, taxation laws, terms and conditions of the loan and the like. These factors in turn will be influenced by the monetary and fiscal policies of the host countries. In general, as our discussion on the sources of funds for MNCs indicates, despite numerous alternatives available for raising funds, MNCs depend primarily on their retained earnings and bank credit from local money markets.

The following sections deal with the sources of funds for transnational drug companies in India where we see, *inter alia*, if the empirical data on the sources of funds for these companies tally with the general structure of sources of funds for MNCs presented above. A detailed Table 5.2 showing the sources of funds for our three groups of drug companies appears in the appendix to this chapter (also see Figure 5.3). We first explain the set-up of the table and the methodology followed.

The liability side of a balance sheet represents the position regarding the finances of a company and the various sources from which the same have been raised. All the concepts concerning the sources of finances used in the table connote the same meaning as in the normal balance sheets. But a distinction has been made between the foreign and Indian share capital. These two are defined as follows :

(1) Foreign share capital = (Total share capital—bonus issues) × r where r is the proportion of total share capital owned by parents.

(2) Indian share capital = (Total share capital—bonus shares) × $(1-r)$.

The above definitions of foreign and Indian share capital are based on the fact that if a proper distinction between the two is to be made then the bonus issues should be excluded from total share capital. This is because the bonus issues are only capitalised reserves built by retained earnings generated from operations

within the country. Bonus issues thus could be added back to reserve funds to appear as a part of internal funds of the company. Analogously, the accumulated reserves only show a claim of the parents on it without any fresh transfer of resources having taken place from abroad. This is not to relegate the importance of ownership aspect to the background, but to make a distinction between whether a source is actually coming from abroad or it is simply owned by foreigners.

Thus the total foreign sources of finance can be defined as foreign share capital plus foreign loans. However, in our case, it was found that in most of the years the foreign loans represented zero amount to the total loans of the companies and in the rest only a fraction of the total finances. Hence Table 5.2 has no separate column for them.

The internal sources of funds are defined to include reserves, the bonus component of the share capital, and provisions. The external sources are defined to include paid-up component of the share capital, long-term loans, short-term loans and sundry creditors. Following convention, net sundry creditors (sundry creditors minus sundry debtors) are also shown separately in the table. A breakdown of long-term and short-term borrowings both from banking and non-banking sources also appears in the table. A further breakdown of long-term and short-term non-banking sources of finance also appears separately in other tables and has been analysed in the appropriate places.

For each year, beginning from 1970-71 up to 1977-78, Table 5.2 has three columns. The first column depicts the absolute amounts of total funds of drug companies raised from various sources. This first column has two parts, the first part including share capital, reserve funds and long-term loans. The addition of these three items shows the position regarding total capital employed by the companies. The second part includes current liabilities, the various constituents of which when added to total capital employed represent the total finances of the concerned companies. The percentage shares of various items constituting total capital employed appear in the second column of each year. And the percentage shares of various items constituting the total finances appear in the third column of each year.

Before we set out to examine the share of various constituents in the total capital employed and in the total finances of drug

TABLE 5.2

Sources of Funds for Drug Multinational Corporations in India : 1970-71—1977-78

(Rs. in lakhs)

S. No.	Particulars	1970-71			1971-72			1972-73			1973-74		
		Amount	% of TCE	% of TF	Amount	% of TCE	% of TF	Amount	% of TCE	%of TF	Amount	% of TCE	% of TF
1	2	3	4	5	6	7	8	9	10	11	12	13	14
						Group I							
A.	Share Capital of which:	327.79	49.59	23.08	345.09	42.23	20.81	350.35	38.94	19.67	352.98	33.34	17.23
	A_{11} *Paid-up Component*	248.20	37.55	17.48	249.40	30.52	15.04	254,66	28.30	14.30	257.29	24.30	12.56
	a_{11} Indian	138.99	21.03	9.79	137.17	16.79	8.27	140.06	15.57	7.87	141.51	13.37	6.91
	a_{12} Foreign	109.21	16.52	7.69	112.23	13.73	6.77	114.60	12.73	6.43	115 78	10.93	5.65
	A_{12} *Bonus Component*	79.59	12.04	5.60	95.69	11.71	5.77	95.69	10.64	5.37	95.69	9.04	4.67
B.	Reserves	183.39	27.74	12.91	257.17	31.47	15.51	335.73	37.31	18.85	403.43	38.11	19.69
C.	*Long-term Loans*	149.85	22.67	10.55	214.94	26.30	12.96	213.66	23.75	12.00	302.20	28.55	14.74
	Bank	103.69	15.69	7.30	153.02	18.72	9.23	143.98	16.00	8.08	134.30	12.69	6.55
	Non-bank	46.16	6.38	3.25	61.92	7.58	3.73	69.68	7.75	3.91	167.90	15.86	8.19
D.	Total Capital Employed (A+B+C)	661.03	100.00		817.20	100.00		899.74	100.00		1058.61	100.00	

E.	Other Liabilities of which	759.20	—	53.46	795.47	—	50.71	881.17	—	49.48	990.59	—	48.34
	E_{11} *Short-term Loans*	383.62	—	27.01	432.58	—	26.09	499.67	—	28.06	522.13	—	25.48
	Bank	234.85	—	16.54	295.52	—	17.82	355.94	—	19.99	417.72	—	20.38
	Non-bank	148.77	—	10.47	137.06	—	8.27	143 73	—	8.07	104.41	—	5.10
	E_{12} Sundry creditors	303.58	—	21.37	328.44	—	19.81	255.15	—	14.33	298.55	—	14.57
	(Net sundry creditors)	46.11	—	3.30	—20.05	—	—1.21	—132.64	—	—7.45	—110.13	—	—5.37
	E_{13} Others (Mainly provisions)	72.00	—	5.07	79.69	—	4.81	126.35	—	7.09	169.91	—	8.29
F.	Total Internal Finance (A_{12}+B+E_{13})	334.98	—	23.59	432.55	—	26.09	557.77	—	31.32	669.03	—	32.65
G.	Total External Finance (A_{11}+C+E_{11}+E_{12})	1085.25	—	76.41	1225.36	—	73.91	1223.14	—	68.68	1380.17	—	67.35
H.	Total Finance (F+G)	1420.23	—	100.00	1657.91	—	100.00	1780.91	—	100.00	2049.20	—	100.00

(Contd.)

TABLE 5.2 (*Contd.*)

Sl. No.	Particulars	1974-75 Amount	1974-75 % of TC	1974-75 % of TF	1975-76 Amount	1975-76 % of TC	1975-76 % of TF	1976-77 Amount	1976-77 % of TC	1976-77 % of TF	1977-78 Amount	1977-78 % of TC	1977-78 % of TF
1	*2*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*
						Group I							
A.	Share Capital of which:	428.10	37.45	13.93	512.90	42.34	20.96	552.10	40.64	18.66	572.10	37.49	15.72
	A_{11} *Paid-up Component*	332.41	29.08	10.82	332.41	27.44	13.58	332.41	24.47	11.23	352.41	23.09	9.68
	a_{11} Indian	182.83	15.99	5.95	182.83	15.09	7.47	199.45	14 68	6.74	214.97	14.09	5.91
	a_{12} Foreign	149.58	13.09	4.87	149.58	12.35	6.11	132.96	9.79	4.49	137.44	9.00	3.78
	A_{12} *Bonus Component*	95.69	8.37	3.11	180.49	14.90	7.38	219.69	16.17	7.42	219.69	14.39	6.04
B.	Reserves	493.65	43.18	16.06	449.08	37.07	18.35	504.87	37.16	17.06	599.83	39.30	16.48
C.	*Long-term Loans*	221.39	19.37	7.20	249.36	20 59	10.91	301.50	22.19	10.19	354.26	23.21	9.73
	Bank	18.00	1.58	0.58	24.20	1.99	0.99	19.60	1.44	0.66	20.63	1.35	0.56
	Non-bank	203.39	17.79	6.62	225.16	18.59	9.20	281.90	20.75	9.53	333.65	21.86	9.17
D.	Total Capital Employed (A+B+C)	1143.14	100.00		1211.34	100.00		1358.47	100.00		1526.19	100.00	

E.	Other Liabilities of which:	1930.31	—	62.81	1235.64	—	50.50	1600.61	—	54.09	2113.16	—	58.06
	E_{11} *Short-term Loans*	749.68	—	24.39	640.87	—	26.19	723.96	—	24.47	741.73	—	20.38
	Bank	607.31	—	19.76	582.77	—	23.82	666.02	—	22.51	695.98	—	19.12
	Non-bank	142.37	—	4.63	58.10	—	2.37	57.94	—	1.96	45.75	—	1.26
	E_{12} Sundry creditors	485.37	—	15.79	555.24	—	22.69	548.51	—	18.53	619.29	—	19.02
	(Net sundry creditors)	—66.12	—	—2.15	—62.39	—	—2.55	—201.63	—	—6.81	—155.19	—	—4.26
	E_{13} Others (Mainly provisions)	695.26	—	22.62	39.53	—	1.62	328.24	—	11.09	752.14	—	20.66
F.	Total Internal Finance (A_{12}+B+E_{13})	1284.60	—	41.80	669.10	—	27.34	1052.80	—	35.58	1571.66	—	43.19
G.	Total External Finance (A_{11}+C+E_{11}+E_{12})	1788.85	—	58.20	1777.88	—	72.66	1906.28	—	64.42	2067.69	—	56.81
H.	Total Finance (F+G)	3073.45	—	100.00	2446.98	—	100.00	2959.08	—	100.00	3639.35	—	100.00

(*Contd.*)

TABLE 5.2 (*Contd.*)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
						Group II							
A.	Share Capital of which:	587.91	43.63	23.06	598.70	38.34	21.01	610.70	35.90	18.32	646.20	32.64	16.27
	A_{11} *Paid-up Component*	443.37	32.90	17.38	454.16	29.08	15.93	454.16	26.70	13.63	489.66	24.73	12.33
	a_{11} Indian	199.52	14.81	7.82	204.37	13.08	7.17	204.37	12.01	6.13	225.24	11.38	5.67
	a_{12} Foreign	243.85	18.09	9.56	249.79	16.00	8.76	249.79	14.68	7.49	264.42	13.35	6.66
	A_{12} *Bonus Component*	144.54	10.72	5.67	144.54	9.26	5.07	156.54	9.20	4.70	156.54	7.91	3.94
B.	Reserves	617.64	45.83	24.22	812.53	52.03	28.50	936.31	55.04	28.09	1136.01	57.38	28.61
C.	*Long-term Loans*	142.02	10.54	5.57	150.31	9.63	5.27	154.18	9.06	4.63	197.45	9.97	4.97
	Bank	35.00	2.60	1.37	35.00	2.24	1.22	35.00	2.06	1.05	—	—	—
	Non-bank	107.02	7.94	4.20	115.31	7.38	4.05	119.18	7.01	3.58	197.45	9.97	4.97
D.	Total Capital Employed (A+B+C)	1347.57	100.00		1561.54	100.00		1701.19	100.00		1979.66	100.00	
E.	Other Liabilities of which:	1202.37	—	47.15	1288.63	—	45.21	1631.88	—	48.96	1990.46	—	50.14
	E_{11} *Short-term Loans*	390.16	—	15.30	469.19	—	16.46	575.25	—	17.28	746.26	—	18.80
	Bank	287.95	—	11.29	359.79	—	12.62	457.59	—	13.73	614.84	—	15.49
	Non-bank	102.21	—	4.01	109.40	—	3.84	118.36	—	3.55	131.42	—	3.31
	E_{12} Sundry creditors	385.56	—	15.12	382.76	—	13.42	515.36	—	15.46	594.76	—	14.98
	(Net sundry creditors)	—23.61	—	—0.93	—47.69	—	—1.67	—24.13	—	—0.72	—53.98	—	—1.36
	E_{13} Others (Mainly provisions)	426.65	—	16.73	436.68	—	15.32	540.57	—	16.22	649.44	—	16.36
F.	Total Internal Finance ($A_{12}B+E_{13}$)	1188.83	—	46.62	1393.75	—	48.90	1633.42	—	49.01	1941.99	—	48.92
G.	Total External Finance ($A_{11}+C+E_{11}+E_{12}$)	1361.11	—	53.38	1456.42	—	51.10	1699.65	—	50.99	2028.13	—	51.08
H.	Total Finance (F+C)	2549.94	—	100.00	2850.17	—	100.00	3333.07	—	100.00	3970.12	—	100.00

(*Contd.*)

TABLE 5.2 (*Contd.*)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
						[*Group III*							
A.	Share Capital of which:	2007.63	40.86	27.86	2008.84	43.63	25.08	2196.35	40.51	25.27	2196.40	38.75	24.51
	A_{11} *Paid-up Component*	1391.20	28.31	19.31	1392.41	30.24	17.38	1392.46	25.68	16.02	1392.51	24.57	15.54
	a_{11} Indian	445.18	9.06	6.18	445.57	9.68	5.56	445.59	8.22	5.13	445.60	7.86	4.57
	a_{12} Foreign	946.02	19.25	13.13	946.84	20.56	11.82	946.87	17.46	10.89	946.91	16.71	10.57
	A_{12} *Bonus Component*	616.43	12.54	8.55	616.43	13.39	7.70	803.89	14.83	9.25	803.89	14.18	8.97
B.	Reserves	2592.08	52.75	35.97	2261.50	49.12	28.23	2696.29	49.73	31.00	2930.10	51.70	32.70
C.	*Long-term Loans*	324.16	6.39	4.36	334.14	7.26	4.17	529.20	9.76	6.09	541.38	9.55	6.04
	Bank	120.00	2.44	1.67	135.00	2.93	1.69	125.00	2.31	1.44	108.50	1.91	1.21
	Non-bank	194.16	3.95	2.69	199.14	4.33	2.48	404.20	7.45	4.65	432.88	7.64	4.83
D.	Total Capital Employed (A+B+C)	4913.87	100.00		4604.48	100.00		5421.14	100.00		5667.88	100.00	

E.	Other Liabilities of which:	2291.79	—	31.81	3405.35	—	42.51	3270.04	—	37.62	3293.66	—	36.75
	E_{11} *Short-term Loans*	971.93	—	13.49	1142.97	—	14.27	1261.28	—	14.51	1076.41	—	12.01
	Bank	731.29	—	10.15	890.35	—	11.12	776.23	—	8.93	518.21	—	5.78
	Non-bank	240.64	—	3.34	252.62	—	3.15	485.05	—	5.58	558.20	—	6.23
	E_{12} Sundry creditors	911.75	—	12.65	979.04	—	12.22	1034.77	—	11.91	1045.68	—	11.67
	(Net sundry creditors)	—543.35	—	—7.54	—718.01	—	—8.96	—871.03	—	—10.12	—836.33	—	—9.33
	E_{13} Other (Mainly provisions)	408.11	—	5.66	1283.34	—	16.02	974.00	—	11.20	1171.57	—	13.07
F.	Total Internal Finance (A_{12}+B+E_{13})	3616.62	—	50.66	4161.27	—	51.95	4474.18	—	51.48	4905.56	—	54.74
G.	Total External Finance (A_{11}+C+E_{11}+E_{12})	3589.04	—	49.81	3848.56	—	48.06	4217.71	—	48.52	4055.98	—	45.26
H.	Total Finance (F+G)	7205.66	—	100.00	8009.83	—	100.00	8691.89	—	100.00	8961.54	—	100.00

(*Contd.*)

TABLE 5.2 (*Contd.*)

1	2	15	16	17	18	19	20	21	22	23	24	25	26
						Group III							
A.	Share Capital of which:	2490.82	40.94	23.97	2595.83	45.07	23.69	3079.81	46.99	26.43	3641.91	51.95	29.08
	A_{11} *Paid-up Component*	1392.54	22.89	13.40	1392.55	24.18	12.71	1392.55	21.25	11.95	1420.73	20.27	11.34
	a_{11} Indian	445.61	7.32	4.29	445.62	7.74	4.07	445.62	6.80	3.82	454.63	6.49	3.63
	a_{12} Foreign	946.93	15.57	9.11	946.93	16.44	8.64	946.93	14.45	8.13	966.10	13.78	7.71
	A_{12} *Bonus Component*	1098.28	18.05	10.57	1203.28	20.89	10.98	1687.26	25.74	14.48	2221.18	31.68	17.73
B.	Reserves	3099.94	50.96	29.84	2701.63	46.91	24.66	2995.39	45.70	25.71	2936.90	41.89	23.45
C.	*Long-term Loans*	492.72	8.10	4.74	462.27	8.03	4.22	478.93	7.31	4.11	431.55	6.16	3.45
	Bank	105.50	1.73	1.02	7.00	0.12	0.06	25.00	0.38	0.21	25.00	0.36	0.20
	Non-bank	387.22	6.37	3.72	455.27	7.90	4.16	453.93	6.93	3.90	406.55	5.80	3.25
D.	Total Capital Employed (A+B+C)	6083.48	100.00		5759.73	100.00		6554.13	100.00		7010.36	100.00	

E.	Other Liabilities of which:	4306.75	—	41.45	5196.10	—	47.43	5096.83	—	43.75	5515.02	—	44.03
	E_{11} *Short-term Loans*	1307.97	—	12.59	1189.42	—	10.85	1144.81	—	9.83	1126.60	—	8.99
	Bank	763.11	—	7.34	1042.34	—	9.51	1009.44	—	8.66	1004.60	—	8.02
	Non-bank	544.86	—	5.24	147.08	—	1.34	135.37	—	1.16	122.00	—	0.97
	E_{12} Sundry creditors	1664.17	—	16.02	1639.41	—	14.96	2014.12	—	17.29	2157.07	—	17.14
	(Net sundry creditors)	—330.92	—	—3.18	—536.28	—	—4.89	—569.41	—	—4.89	—788.67	—	—6.30
	E_{13} Others (Mainly provisions)	1334.61	—	12.84	2367.27	—	21.61	1937.90	—	16.63	2241.35	—	17.89
F.	Total Internal Finance (A_{12}+B+E_{13})	5532.83	—	55.25	6272.18	—	57.25	6620.55	—	56.82	7399.43	—	59.08
G.	Total External Finance (A_{11}+C+E_{11}+E_{12})	4857.40	—	46.75	4683.65	—	42.75	5030.41	—	43.18	5125.95	—	40.92
H.	Total Finance (F+G)	10390.23	—	100.00	10955.83	—	100.00	11650.96	—	100.00	12525.38	—	100.00

(*Contd.*)

TABLE 5.2 (*Contd.*)

1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
						Groups I-III							
A.	Share Capital of which:	2923.33	42.23	26.16	2952.63	42.28	23.59	3157.40	39.36	22.87	3195.58	36.70	21.33
	A_{11} *Paid-up Component*	2082.77	30.09	18.64	2095.97	30.01	16.74	2101.28	26.19	15.22	2139.46	24.57	14.28
	a_{11} Indian	916.42	13.24	8.20	922.23	13.21	7.37	924.56	11.52	6.70	941.36	10.81	6.28
	a_{12} Foreign	1166.35	16.85	10.44	1173.74	16.80	9.38	1176.72	14.67	8.52	1198.10	13.76	8.00
	A_{12} *Bonus Component*	840.56	12.14	7.52	856.66	12.27	6.84	1056.12	13.16	7.65	1056.12	12.13	7.05
B.	Reserves	3393.11	49.02	30.36	3331.20	47.70	26.61	5016.94	49.46	28.74	4469.54	51.34	29.84
C.	*Long-term Loans*	606.03	8.75	5.42	699.39	10.02	5.69	897.04	11.18	6.50	1041.03	11.96	6.95
	Bank	258.69	3.74	2.31	323.02	4.63	2.58	303.98	3.79	2.20	242.80	2.79	1.62
	Non-bank	347.34	5.01	3.11	376.37	5.39	3.01	593.06	7.39	4.30	798.23	9.17	5.33
D.	Total Capital Employed (A+B+C)	6922.47	100.00		6983.22	10 .00		8022.77	100 00		8706.15	100.00	

E.	Other Liabilities of which:	4253.36	—	38.06	5534.69	—	44.21	5783.10	—	41.80	6274.71	—	41.88
	E_{11} *Short-term Loans*	1745.71	—	15.62	2044.64	—	16.33	2336.90	—	16.93	2344.80	—	15.65
	Bank	1254.09	—	11.29	1545.66	—	12.35	1589.76	—	11.52	1550.77	—	10.35
	Non-bank	491.62	—	4.40	499.08	—	3.98	747.14	—	5.41	794.03	—	5.30
	E_{12} Sundry creditors	1600.89	—	14.32	1690.24	—	13.50	1805.28	—	13.08	1938.99	—	12.94
	(Net sundry creditors)	—520.15	—	—4.65	—785.75	—	—6.28	—1027.80	—	—7.44	—1000.44	—	—6.68
	E_{13} Others (Mainly provisions)	906.76	—	8.11	1799.71	—	14.38	1640.92	—	11.89	1990.92	—	13.29
F.	Total Internal Finance (A_{12}+B+E_{13})	5140.43	—	46.00	5987.57	—	47.83	6665.37	—	48.28	7516.58	—	50.17
G.	Total External Finance (A_{11}+C+E_{11}+E_{12})	6035.40	—	54.00	6530.34	—	52.17	7140.50	—	51.72	7464.28	—	49.83
H.	Total Finance (F+G)	11175.83	—	100.00	12517.91	—	100.00	13805.87	—	100.00	14980.86	—	100.00

(*Contd.*)

TABLE 5.2 (*Contd*).

1	2	15	16	17	18	19	20	21	22	23	24	25	26
						Groups I-III							
A.	Share Capital of which:	3650.26	38.20	20.33	3976.07	42.52	21.72	4619.25	43.88	23.38	5216.16	45.48	24.04
	A_{11} *Paid-up Component*	2214.61	23.18	12.34	2214.62	23.68	12.10	2214.62	21.04	11.21	2277.61	19.86	10.50
	a_{11} Indian	974.43	10.20	5.43	974.43	10.42	5.32	1040.87	9.89	5.27	1070.48	9.33	4.93
	a_{12} Foreign	1240.18	12.98	6.91	1240.19	13.26	6.77	1173.75	11.15	5.94	1207.13	10.53	5.56
	A_{12} *Bonus Component*	1435.65	15.02	8.00	1761.45	18.84	9.62	2404.63	22.84	12.17	2938.55	25.62	13.54
B.	Reserves	4857.55	50.83	27.06	4390.54	46.95	23.98	4856.60	46.14	24.58	5164.68	45.03	23.80
C.	*Long-term Loans*	1048.19	10.97	5.84	985.22	10.54	5.38	1050.77	9.98	5.32	1087.64	9.48	5.01
	Bank	153.50	1.61	0.86	77.20	0.83	0.42	85.60	0.81	0.43	76.63	0.66	0.35
	Non-bank	894.69	9.36	4.98	908.02	9.71	4.96	965.17	9.17	4.89	1011.01	8.82	4.65
D.	Total Capital Employed (A+B+C)	9556.00	100.00		9351.83	100.00		10526.62	100.00		11468.48	100.00	

E.	Other Liabilities of which:	8395.93	—	46.77	8956.46	—	48.92	9227.82	—	46.71	10232.13	—	47.15
	E_{11} *Short-term Loans*	2864.77	—	15.96	2565.10	—	14.01	2525.17	—	12.78	2513.22	—	11.58
	Bank	2034.97	—	11.34	2287.84	—	12.50	2328.22	—	11.79	2341.83	—	10.79
	Non-bank	829.80	—	4.62	277.26	—	1.51	196.95	—	1.00	171.39	—	0.79
	E_{12} Sundry creditors	2944.98	—	16.40	2971.61	—	16.23	3409.28	—	17.26	3688.55	—	17.00
	(Net sundry creditors)	—407.12	—	—2.27	—759.48	—	—4.15	—786.23	—	—3.98	—942.74	—	—4.34
	E_{13} Others (Mainly provisions)	2586.18	—	14.41	3419.75	—	18.68	3293.37	—	16.67	4030.36	—	18.57
F.	Total Internal Finance (A_{12}+B+E_{13})	8879.38	—	49.46	9571.74	—	52.28	10554.60	—	53.43	12133.59	—	55.91
G.	Total External Finance (A_{11}+C+E_{11}+E_{12})	9072.55	—	50.54	8736.55	—	47.72	9199.84	—	46.57	9567.02	—	44.09
H.	Total Finance (F+G)	17951.93	—	100.00	18308.29	—	100.00	19754.44	—	100.00	21700.61	—	100.00

Note : Paid-up component of share capital includes the value of shares issued for non-cash considerations also. The amount on this account is, however, quite small (See Table 5.3).

Source : Company Annual Accounts/Reports.

MNCs in India, it would be useful to first examine the capital structure of these companies, from the very day of their inception up to 1977-78. This will show, among other things, as to how fast the original equity of foreign drug companies in India has increased and by what process.

Capital Structure of Drug MNCs

Table 5.3 depicts a detailed breakdown of capital structure of all the 27 individual companies comprising our three groups. The table lists the name of the company, the date of establishment of a place of business in India, original equity brought in by the company, the equity in 1977-78, and a breakdown of the present equity. Columns 6-11 indicate as to how the rise in original equity has come about. This table has some interesting features worthy of note. To begin with, we find that at the aggregate level, the three groups have registered respectively a rise of 424 per cent (Rs. 109.10 lakhs to Rs. 572.10 lakhs), 400 per cent (Rs. 202.51 lakhs to Rs. 1,002.15 lakhs) and 700 per cent (Rs. 456 lakhs to Rs. 3,641.91 lakhs) in their original capital. That is to say, since the date of their establishing a place of business in India the foreign drug companies in aggregate have increased their original equity by about 380 per cent (Rs. 767.61 lakhs to Rs. 5,216.16 lakhs).

There are three ways by which the share capital of a company can grow : first, by way of fresh issue of shares for cash; second, by way of fresh issue of shares for consideration other than cash, e.g., in lieu of services received or in part or full payment of an asset purchased; and thirdly, by way of stock dividends or bonus issues. Columns 6 through 11 in the table show the contribution of these three sources in the increased share capital of our three groups of drug companies. The table shows an overwhelming reliance on bonus issues as a source of increasing the capital base by all the three groups. The highest reliance on this source is that of large companies in group III, 70 per cent, followed by medium-sized companies of group II, 62 per cent, and small-size companies of group I, 48 per cent. Fresh issue of shares for cash occupies second place in raising the total capital base of these companies. Thus, the first group has a share of 47 per cent of these issues in its total increased capital, second group, 31 per cent, and the third group, a slightly lower 30 per cent. Issue of shares for non-cash considerations occupies a rather

insignificant place in the total increased capital of all the three groups. These issues had only 6 per cent share in the increased capital base of the first group, 7 per cent share in the case of the second group, and less than 1 per cent share in the case of the third group. Aggregate data for all the three groups show that the share of bonus issues in the total increased capital of foreign drug companies is 66 per cent, that of fresh issue of shares for cash, 32 per cent, and that of fresh issue of share for non-cash considerations, 2 per cent.

The foregoing was an examination of data at aggregate level. At company level, we notice a remarkable increase in the original equity of some of the drug companies over the years of their operations in the country, primarily by way of capitalisation of reserves. For instance, in the first group a mere Rs. 0.20 lakhs of original equity of Biological Evans which began its business in India in 1953, had increased to Rs. 64.80 lakhs in 1977-78 (a rise of some 32000 per cent) in which the bonus issues hold a share of Rs. 30.49 lakhs, 47 per cent. Similarly, Boehringer Knoll's original equity of Rs. 7.50 lakhs in 1959 increased to Rs. 100 lakhs in 1977-78 (a rise of 1200 per cent) in which bonus issues held a share of Rs. 65 lakhs, 70 per cent. And in the case of McGraw Ravindra a 100 per cent rise in original equity of Rs. 19.20 lakhs in 1964 has occurred solely by way of bonus issues. The growth process of capital in the case of some of the companies in the second and third groups is no less spectacular. The classic case is, however, that of Geoffrey Manners in Group II whose original equity of only Rs. 0.01 lakhs in 1943 increased to Rs. 192 lakhs in 1977-78[7] and nearly all of this increase (97.4 per cent) has come about by way of capitalisation process. In the case of large companies in the third group, the notable instances are that of Glaxo and Pfizer. Glaxo had an original equity of only Rs. 1.50 lakhs when she established business in India in 1924. But its equity had risen to Rs. 1160 lakhs in 1977-78 with bonus issues comprising 62 per cent share. Similarly, Pfizer's original equity of a meagre Rs. 2.00 lakhs in 1950 had increased to Rs. 1004.58 lakhs in 1977-78 with bonus issues comprising 74 per cent share.

Two observations become very clear from our discussion thus far. First, all the foreign drug companies have registered a tremendous rise in their original share capital since their respective years of incorporating the business in India. And secondly, a

TABLE 5.3

Capital Structure of Drug MNCs

(*Rs. in lakhs*)

Name	*Establi-shed*	*Original equity*	*Present equity (1977-78)*	*Increase over original equity (4-3)*	*Breakdown of Increased Equity*					
					Issued for cash		*Issued for non-cash considerations*		*Issued by bonus shares*	
					Amount	*Percentage to total*	*Amount*	*Percentage to total*	*Amonnt*	*Percentage to total*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
Group I										
Biological Evans	1953	0.20	64.80	64.60	19.31	29.89	14.80	22.91	30.49	47.20
Boehringer Knoll	1959	7.50	100.00	92.50	27.50	29.73	—	—	65.00	70.27
Carter Wallace	1968	10.48	14.86	4.38	—	—	7.34	49.40	—	—
Duphar Interfran	1951	0.48	92.00	91.52	46.52	50.83	—	—	45.00	49.17
I. Schering	1947	0.84	6.00	5.16	0.16	3.10	—	—	5.00	96.90
J.L. Morrison	1934	0.10	97.50	97.40	91.00	92.43	—	—	6.40	6.57
McGraw Ravindra	1964	19.20	38.40	19.20	—	—	—	—	19.20	100.00
Raptakas	1930	0.43	68.00	67.57	24.07	35.62	—	—	43.50	64.37
Roussel Pharm.	1956	0.17	6.54	6.37	6.20	97.33	0.17	2.67	—	—
Searle India	1967	60.00	69.00	9.00	9.00	100.00	—	—	—	—
Wander Ltd.	1962	9.70	15.00	5.30	—	—	5.22	35.00	5.10	34.00
		109.10	572.10	463.00	215.78	46.60	27.53	5.95	219.69	47.45

(*Contd.*)

TABLE

1	2	3	4	5
Group II				
Boots	1944	10.00	169.81	159.81
Cynamid	1947	1.50	140.29	138.79
Geoffrey Manners	1943	0.01	192.00	191.99
German Remedies	1949	0.13	127.50	127.37
Organon	1967	97.55	97.55	—
Richardson Hindustan	1964	0.02	110.00	109.98
Synbiotics	1961	60.00	75.00	15.00
Wyeth Laboratory	1960	33.30	90.00	56.70
		202.51	1,002.15	799.64
Group III				
Glaxo	1924	1.50	1,160.00	1,158.50
Hoechst	1956	5.00	340.51	335.51
Merck Sharp & Dohme	1958	180.00	180.00	—
Parke Davis	1958	87.50	210.00	122.50
Pfizer	1950	2.00	1,004.58	1,032.58
Roche	1958	100.00	300.00	200.00
Sandoz	1947	10.00	187.50	177.50
Warner Hindustan	1963	70.00	259.32	189.32
		456.00	3,641.91	3,185.91
Total (I-III)		767.61	5,216.16	4,448.55

Note : It is taken that all the original equity was subscribed for cash.

Sources : (1) Company annual accounts and reports. (2) Ministry of Petroleum and Chemicals, GOI, Report of the Committee on Drugs and Pharmaceutical, 1975 and Indian Drugs Statistics, 1978 & 1980. (3) Bombay Stock Exchange Directory.

5.3 (*Contd.*)

6	7	8	9	10	11
47.21	29.60	10.00	6.26	102.50	64.14
24.55	17.69	44.09	31.76	70.15	50.57
5.00	2.60	—	—	186.99	97.40
64.32	50.50	—	—	63.05	49.50
—	—	—	—	—	—
49.98	45.44	—	—	60.00	54.56
15.00	100.00	—	—	—	—
41.70	73.54	—	—	15.00	26.46
247.86	31.00	54.09	6.76	497.69	62.24
438.50	37.85	—	—	720.00	62.15
75.00	22.35	—	—	260.51	77.65
—	—	—	—	—	—
17.50	14.29	—	—	105.00	85.71
263.73	26.31	—	—	738.85	73.63
—	—	—	—	200.00	100.00
126.40	77.21	13.60	7.66	37.50	21.13
30.00	15.85	—	—	159.32	84.15
951.13	29.85	13.60	0.43	2,221.18	69.72
1,414.77	31.80	95.22	2.14	2,938.56	66.06

major portion of this growth in share capital has come about by way of capitalisation of reserves, i.e., by way of stock dividend issues. Before we proceed further, we will briefly comment on the pros and cons of these issues in view of their paramount importance in the context of foreign drug companies in India.

The issue of stock dividends in the first place displays the prosperity of a company. By capitalising its reserves, the company finances its expansion and modernisation plans, for it is usually through the enhanced share capital and long-term loans that the company acquires fixed assets. The issue of stock dividends also increases the credit standing of the company and enables it to borrow funds at 'reasonable' terms from the host country's money markets. But it should also be noted that very fast growing companies sometimes use the instrument of stock dividends to suppress the profitability and dividend pay-out ratios on share capital.

The limitations on the issue of stock dividends arise out of the fact that the company in the first place should have substantial reserves, a part of which then can be capitalised. And the extent of reserves in turn are determined by the past profitability and the profit appropriation policies of the company. External limitations on the declaration of bonus issues arise out of government's guidelines governing these issues. In India, these guidelines include the following restrictions. Firstly, bonus issues are not permitted in lieu of dividends. Secondly, only two bonus issues are allowed to a company over a period of five years and these two issues should have a time lag of at least twenty-four months. Thirdly, usually at any point of time the total amount permitted to be capitalised out of free reserves is not allowed to exceed the total amount of the company's paid-up capital. Fourthly, residual reserves after the proposed capitalisation should be at least $33\frac{1}{3}$ per cent of the increased paid-up capital. Finally, in the case of companies with foreign shareholding, where expansion is considered unlikely or where the profits are unduly high, a reduction in the foreign shareholding is generally stipulated as a condition for approval of the stock dividends.

After these observations we examine the capital investment position of foreign drug companies. Here we ascertain the growth and the share of various constituents in the total amount of capital

investment position of our three groups of drug companies over the eight years, 1970-71 to 1977-79.

Capital Investment Position of Drug MNCs

The first half of column 3 in Table 5.2 shows the position regarding total capital investment of our three groups of drug companies and column 4 the percentage share of various constituents comprising this total capital investment. We notice in the case of the first group that its total capital investment has risen steadily from Rs. 661.03 lakhs in 1970-71 to Rs. 1526.19 lakhs in 1977-78, indicating an overall rise of 130 per cent and average annual rise of around 13 per cent.[8] The average for eight years shows that reserves (including the capitalised part of the share capital) have the highest share, 48 per cent, in the total capital investment of this group followed by paid-up capital, 28 per cent, and the long-term loans, 23 per cent. The respective shares of Indian shareholders and foreign parents in the total paid-up capital are 16 per cent and 12 per cent. This means that the actual contribution of parents in the total capital investment of the first group is only 12 per cent. The Indian shareholders have not lagged behind with their 16 per cent share. It should be pointed out that although in absolute terms the respective shares of both the Indian shareholders and of the parents in the total capital investment have increased respectively from Rs. 139 lakhs in 1970-71 to Rs. 215 lakhs in 1977-78 and from Rs. 109 lakhs to Rs. 137 lakhs, their shares in percentage terms has steadily fallen from 21 per cent in 1970-71 to 14 per cent in 1977-78 in the case of Indian shareholders and from 17 per cent to 9 per cent in the case of foreign parents. The share of reserves in total capital investment has, on the other hand, increased during this period from 28 per cent to 39 per cent (Rs. 183 lakhs to Rs. 600 lakhs). The share of long-term loans has also increased proportionately (Rs. 150 lakhs to Rs. 354 lakhs) to maintain around 23 per cent share in the total capital investment. But the share of long-term banking sources in the total capital investment has steadily fallen over the eight years and that of non-banks has steadily risen, as a result there is no overall decline in total long-term loans for this group. A similar situation prevails in the case of the other two groups. We deal with the reasons and the implications thereof for this shift in emphasis from long-term loans from banking to non-banking sources in the next section when we

investigate the overall sources of finances of these companies.

As regards the second group, the total capital investment has risen from Rs. 1348 lakhs in 1970-71 to Rs. 2932 lakhs in 1977-78, indicating an overall rise of around 120 per cent and an average annual rise of 12 per cent. The average for eight years shows that reserves have the highest share, 65 per cent in the total capital investment of this group, followed by paid-up capital, 24 per cent, and long-term loans, 11 per cent. The respective shares of Indian shareholders and the parents in the total paid-up capital are 13 per cent and 11 per cent. These figures, like those for the first group, show that the actual contribution of parents to total capital investment in their subsidiaries in India is as low as 13 per cent. Indian shareholders have closely followed with their 11 per cent share. It should be pointed out here that over the eight years the additional cash contributions by parents to the share capital of their subsidiaries in India have been only Rs. 18.47 lakhs (Rs. 243.85 lakhs in 1970-71 to Rs. 262.32 lakhs in 1977-78) and that of Indian shareholders, Rs. 42.63 lakhs (Rs. 199.52 lakhs to Rs. 242.15 lakhs); as a result, in percentage terms their respective shares in total capital investment have declined from 18 per cent in 1970-71 to 9 per cent in 1977-78 in the case of foreign parents and from 15 per cent to 8 per cent in the case of Indian shareholders. The share of reserves and long-term loans, on the other hand, has increased proportionately over the eight years to maintain their respective share in total capital investment at 65 per cent and 11 per cent.

Total capital investment in the case of the third group of companies shows a rise from Rs. 4913.87 lakhs in 1970-71 to Rs. 7010.36 lakhs in 1977-78, indicating an overall rise of 40 per cent and average annual rise of around 6 per cent. The average annual percentage for eight years shows that, like those for the other two groups, reserves have the highest share, 68 per cent, in the total capital investment of this group followed by paid-up capital, 25 per cent, and long-term loans, 8 per cent. The table shows that in the total of 25 per cent of paid-up capital, the share of foreign parents is 17 per cent and that of Indian shareholders, 8 per cent. Not only these percentage shares of both the foreign and Indian shareholders to total capital investment are low, but they have also at the same time risen very marginally over eight years, 1970-71 to 1977-78 from Rs. 946.02 lakhs to Rs. 966.10 lakhs in the case of foreign shareholders, and from Rs. 445.18 lakhs to

Rs. 454.63 lakhs in the case of Indian shareholders. As a result, in percentage terms the shares of parents in total capital investment have declined from 19 per cent in 1970-71 to 14 per cent in 1977-78 and that of Indian shareholders from 9 per cent to 6 per cent. The shares of reserves and long-term loans, on the other hand, have increased accordingly over the eight years to maintain their share in capital investment at 68 per cent and 8 per cent respectively.

The statistics in the preceding sections show that smaller companies in Group I have registered the highest annual growth (13 per cent) in their total capital investment over the eight-year period, 1970-71 to 1977-78, followed by medium-sized companies in the second group (12 per cent) and the large-sized companies in the third group (6 per cent). A common feature that we notice in all the three groups is a relatively small share of cash contributions to total capital investment. Not only the cash contributions to capital investment are low, they have characteristically risen only marginally over the eight-year period under study, with the result that in percentage terms their share in total capital investment has largely fallen. The aggregate figures for all the three groups show that their total capital investment has risen from Rs. 6922.47 lakhs in 1970-71 to Rs. 11468.48 lakhs in 1977-78, indicating an overall rise of 66 per cent and an average annual rise of around 8 per cent. The average for eight years shows that reserves have the highest, 65 per cent, share in the total capital investment of drug MNCs, followed by paid-up capital, 25 per cent, and long-term loans, 10 per cent. Out of a 25 per cent share of paid-up capital in the total capital investment, foreign parents hold 14 per cent share and Indian shareholders 11 per cent. Foreign parents added only an additional amount of Rs. 40.78 lakhs to their original contribution of Rs. 1166.56 lakhs of paid-up capital and Indian shareholders added Rs. 154.06 lakhs to their original contribution of Rs. 916.42 lakhs of share capital. As a result, over the eight years, 1970-71 to 1977-78, their share in total capital investment declined by 6 percentage points (16.85 per cent in 1970-71 to 10.53 per cent in 1977-78) in the case of foreign parents and by about 4 percentage points (13.24 per cent to 9.33 per cent) in the case of Indian shareholders. The reserve funds and the long-term loans, on the other hand, have maintained their respective percentage shares in total capital investment owing to a

proportionate increase in their absolute amounts over the eight years.

One thing that becomes amply clear from our discussion thus far is that the drug MNCs have built up substantial reserves which comprise a large share in their total capital investment. A part of these reserves has also been used from time to time for capitalisation. It would be interesting to know at this point the profit appropriation policies of drug MNCs, determining the distribution of their profits between dividends and retained earnings. For, as mentioned earlier, it is the appropriation policies of companies that determine the division of earnings between payments to shareholders and retained earnings to be used for the future growth of the company. Although both growth and dividends are desirable in the short run, they stand in contrast to each other. A high rate of dividends implies less retained earnings which could result in larger reliance on external funds and *vice versa*. In the following section we first comment briefly on the usual profit appropriation methods of companies. This is followed by an examination of absolute and relative distribution of pre-tax profits between taxes, dividends and retained earnings across the three groups of companies. We then analyse the following four dividend pay-out ratios : (a) dividends on total and paid-up capital, (b) dividends on net worth, (c) dividends on profits before tax, and (d) dividends on profit after tax.

Profit Appropriation

The first obligations to be met out of profits of a company are corporation tax and interest payments followed by statutory transfer to certain reserve funds and dividends on preference shares. The remaining profits are then split between ordinary shareholders and other reserve funds. The factors affecting the dividend policies determining the payments to shareholders are numerous and varied. There are, for instance, legal rules governing the dividend policies which allow the payment of dividends from the current year's earnings or past year's surpluses only and restrict the payments out of capital funds. Further, the cash position of the company, the urgency of its debts repayments, its profit rates, the rate of expansion of net worth, and access to capital markets are some of the important though interdependent factors that govern the dividend policies of a company.

Normally, there exist no legal restrictions on the percentage of profits to be distributed as dividends. But the widely followed practice is to maintain a stable rate of dividends over the years. Even if the earnings of a company rise at a faster rate, the increase in dividends is usually allowed only with a lag. The dividend payments are increased only when the rise in earnings appears sustainable. And once they are increased, strenuous efforts are made to maintain them at the new increased level, despite the fall in profits, if any, in subsequent years. Only when it becomes clear that the earnings are not going to recover, is a fall in the dividend payout ratio allowed.

The dividend payments in India are governed by the Companies Act, 1956. This Act, amended in 1974, drastically changed, *inter alia,* the exisiting dividend provisions of the Companies Act by inserting the new sub-section (2A) to section 205 as also new sections 205A and 205B. The Act lays down that dividend should be paid only out of the profits available after providing for depreciation as per rules and also after transferring an amount of 10 per cent of the profits to reserves. The amendment has introduced another provision aimed at preventing companies from paying dividends out of accumulated profits of any of the previous year or years, except under special circumstances such as in the event of inadequacy or absence of profits in any year. The Government in order to check frittening away of corporate profits by way of distribution of large dividends, sometimes imposes a statutory limit on the distribution of dividends. Such a statutory limit on the distribution of dividends was placed for two years in 1974 when the Government promulgated the Companies (temporary restriction on dividends) Ordinance on July 6, 1974. This ordinance restricted the maximum distributable profits to 33⅓ per cent of the net profits of a company or an amount required to pay 12 per cent dividend on the face value of the equity shares and preference shares of the company, whichever is less.

Table 5.4 (from next page) shows the position regarding profits before tax, profits after tax, tax payment, dividend payments and the retained earnings for our three groups of drug companies over the eight years, 1970-71 to 1977-78. Column 12 shows the percentage distribution of pre-tax profits between taxes, dividends and retained earnings (also Figure 5.1). Columns 13 through 17

TABLE 5.4

Profit Appropriation by Drug MNCs : 1970-71—1977-78

Year	Profit before tax		Profit after tax		Tax (2—4)		Dividends	
	Total	% +/−	Total	% +/−	Total	% +/−	Total	% +/−
1	2	3	4	5	6	7	8	9
			Group I					
1970-71	227.28	—	98.93	—	128.35	—	21.79	—
1971-72	247.71	8.99	117.49	18.76	130.22	1.46	29.47	35.25
1972-73	275.54	11.23	116.29	—1.02	159.25	22.29	37.72	27.99
1973-74	289.12	4.93	129.10	11.02	160.02	0.48	60.45	60.26
1974-75	309.54	7.06	137.69	6.65	171.85	7.39	34.02	—43.72
1975-76	290.02	—6.31	103.12	—25.11	186.90	8.76	56.00	64.61
1976-77	426.56	47.08	161.65	56.76	264.91	41.74	86.48	54.43
1977-78	447.92	5.01	170.66	5.57	277.26	4.66	80.69	—6.70
	—	11.14	—	10.67	184.85	12.40	—	27.45

(Contd.)

TABLE 5.4 *(Contd.)*

(Rs./Lakhs)

Year	Retained Earnings		Distribution of PBT between Tax: Div: RE (%)	Dividends as % of share capital		Dividends as % of net worth	Dividends as % of PBT	Dividends as % of PAT
	Total	% +/−		Total	Paid-up			
1	10	11	12	13	14	15	16	17
			Group I (Contd.)					
1970-71	77.14	—	56:10:34	6.65	39.86	4.26	9.59	22.03
1971-72	88.02	14.10	53:12:35	8.54	47.11	4.89	11.90	25.08
1972-73	78.57	—10.74	58:14:28	10.77	45.66	5.50	13.69	32.44
1973-74	68.65	—12.63	55:21:24	17.13	50.18	7.99	20.91	46.82
1974-75	103.67	51.01	56:11:33	7.95	41.42	3.69	10.99	24.71
1975-76	47.12	—54.55	65:19:16	9.83	31.02	5.24	17.38	54.31
1976-77	74.99	59.15	62:20:18	15.66	48.63	8.18	20.27	53.50
1977-78	89.97	19.98	62:18:20	14.10	48.43	6.89	18.01	47.28
	—	9.47	58:16:26	11.33	44.04	5.83	15.34	38.27

(Contd.)

TABLE 5.4 (*Contd.*)

1	2	3	4	5	6	7	8	9
			Group II					
1970-71	630.41	—	234.60	—	395.81	—	113.00	—
1971-72	820.25	30.11	307.95	31.27	512.30	29.43	119.25	5.53
1972-73	881.24	7.44	290.83	—5.56	590.41	15.23	157.03	31.68
1973-74	996.33	13.06	334.75	15.10	661.58	12.05	141.45	—9.92
1974-75	957.99	—3.85	297.18	—11.22	660.81	—0.12	133.21	—5.83
1975-76	1237.24	29.15	412.20	38.70	825.04	24.85	219.91	65.09
1976-77	1380.18	11.55	470.46	14.13	909.72	10.26	233.96	6.39
1977-78	1439.55	4.30	526.44	11.90	913.11	0.37	265.94	13.58
	—	13.11	—	11.79	683.60	13.15	—	15.22

(*Contd.*)

TABLE 5.4 (*Contd.*)

1	10	11	12	13	14	15	16	17
			Group II (Contd.)					
1970-71	121.60	—	63:18:19	19.22	52.91	9.37	17.92	48.17
1971-72	188.70	55.18	62:15:23	19.92	67.81	8.45	14.54	38.72
1972-73	133.70	—29.15	67:18:15	25.71	64.04	10.15	17.82	53.99
1973-74	193.30	44.58	66:14:20	21.89	68.36	7.94	14.20	42.26
1974-75	163.97	—15.17	69:14:17	18.21	60.69	6.68	13.91	44.82
1975-76	192.29	17.27	67:18:15	25.35	84.18	10.44	17.77	53.35
1976-77	236.50	22.99	66:17:17	23.70	96.08	9.98	16.95	49.73
1977-78	266.41	12.65	63:19:18	26.52	104.36	10.10	18.46	50.48
	—	15.48	65:17:18	22.57	74.80	9.14	16.45	47.69

(*Contd.*)

TABLE 5.4 (*Contd.*)

1	2	3	4	5	6	7	8	9
				Group III				
1970-71	1805.77	—	730.34	—	1075.43	—	367.50	—
1971-72	1743.86	—3.43	796.18	9.01	947.68	—11.88	366.78	—0.20
1972-73	1993.30	14.30	871.90	9.51	1121.40	18.33	390.54	6.48
1973-74	1990.50	—0.14	782.88	—10.21	1207.62	7.69	445.96	14.19
1974-75	1699.70	—14.61	722.18	—7.75	977.52	—19.05	307.78	—30.98
1975-76	1147.55	—32.48	658.71	—8.79	488.84	—50.00	461.75	50.02
1976-77	2427.05	111.50	884.54	34.28	1542.51	215.54	499.40	8.16
1977-78	2823.59	16.34	1102.85	24.68	1720.74	11.55	600.00	20.14
	—	13.07	—	7.25	1135.22	24.60	—	9.69

(*Contd.*)

(*Rs./Lakhs*)

1	10	11	12	13	14	15	16	17
			Group III (Contd.)					
1970-71	362.84	—	60:20:20	19.68	52.50	8.59	21.88	50.32
1971-72	429.40	18.34	54:21:25	18.25	57.18	8.59	21.03	46.07
1972-73	481.36	12.10	56:20:24	17.78	62.62	7.98	19.59	44.79
1973-74	336.92	—30.01	61:22:17	20.30	56.22	8.70	22.40	56.96
1974-75	414.40	23.00	58:18:24	12.36	51.86	5.51	18.11	42.62
1975-76	196.98	—52.47	43:40:17	17.79	47.30	8.72	40.24	70.00
1976-77	385.14	95.52	64:21:15	16.22	63.52	8.22	20.58	56.46
1977-78	503.35	30.69	61:21:18	16.47	77.63	9.12	21.25	54.40
	—	13.88	57:23:20	17.36	58.60	8.18	23.14	52.70

(*Contd.*)

TABLE 5.4 (*Contd.*)

1	2	3	4	5	6	7	8	9
			Groups I-III					
1970-71	2663.46	—	1063.87	—	1599.59	—	502.29	—
1971-72	2811.82	5.57	1221.62	14.83	1590.20	—0.59	515.50	2.63
1972-73	3150.08	12.03	1279.02	4.70	1871.06	17.66	585.29	13.54
1973-74	3275.95	4.00	1246.73	—2.52	2029.22	8.45	647.86	10.69
1974-75	2967.23	—9.42	1157.05	—7.19	1810.18	—10.79	475.01	—26.68
1975-76	2674.81	—9.85	1174.03	1.47	1500.78	—17.09	737.64	55.29
1976-77	4233.79	58.28	1516.65	29.18	2717.14	81.05	819.84	11.14
1977-78	4711.06	11.27	1799.95	18.68	2911.11	7.14	946.43	15.44
	—	10.27	—	8.45	2003.66	12.26	—	11.72

(*Contd.*)

(*Rs./Lakhs*)

1	10	11	12	13	14	15	16	17
			Groups I-III (Contd.)					
1970-71	561.58	—	60:19:21	17.18	51.08	7.52	18.86	47.21
1971-72	706.12	25.74	57:18:25	17.46	58.28	8.20	18.33	42.20
1972-73	693.63	—1.77	59:19:22	18.54	60.87	8.21	18.58	45.76
1973-74	598.87	—13.66	62:20:18	20.27	58.27	8.45	19.78	51.96
1974-75	682.04	13.89	61:16:23	13.01	52.25	5.58	16.01	41.05
1975-76	436.39	—36.02	56:28:16	18.41	53.01	8.75	27.37	62.83
1976-77	696.63	59.63	64:19:17	17.75	68.48	8.65	19.36	54.06
1977-78	859.73	23.41	62:20:18	18.14	79.03	9.12	20.29	52.58
	—	10.17	60:20:20	17.60	60.16	8.06	19.82	49.71

Source : Company Annual Accounts/Reports.

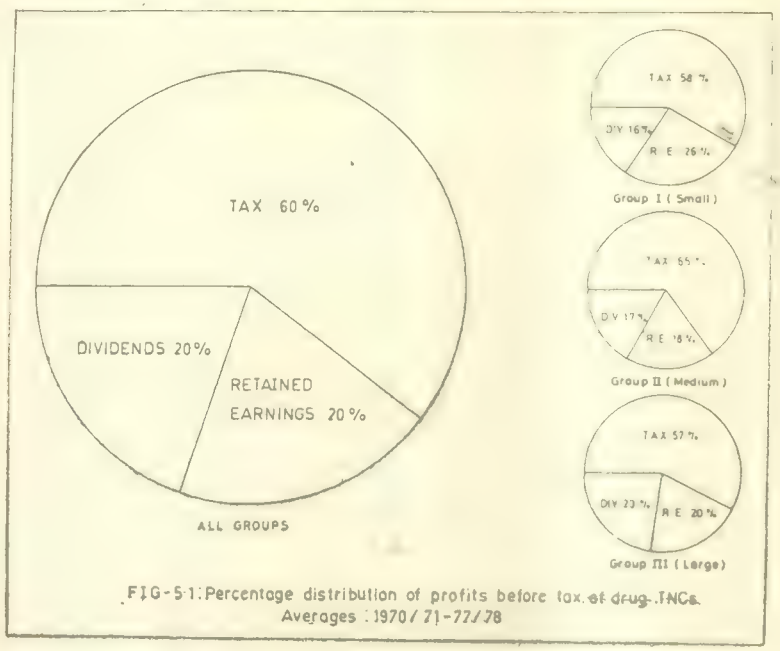


FIG-5.1: Percentage distribution of profits before tax of drug MNCs. Averages : 1970/71-77/78

show various dividend ratios. We first examine the trends in absolute distribution of pre-tax profits between taxes, dividends and retained earnings.

Distribution of Pre-tax Profits

Column 6 in Table 5.4 shows that with the rise in earnings over the eight years, 1970-71 to 1977-78, the tax contribution of drug MNCs has steadily risen by 116 per cent (Rs. 128.35 lakhs to Rs. 277.26 lakhs) in the case of the first group of companies, by 131 per cent (Rs. 395.81 lakhs to Rs. 913.11 lakhs) in the case of the second group of companies and by a comparatively lower, 60 per cent (Rs. 1075.43 lakhs to Rs. 1720.74 lakhs) in the case of the third group of companies. The average for this period shows that the three groups annually contribute, respectively, Rs. 185 lakhs, Rs. 684 lakhs and Rs. 1135 lakhs as taxes to the government and that these payments have risen annually by 12.40 per cent, 13.15 per cent and 24.60 per cent in the case of the three respective groups. The aggregate data for all the three groups show that over the eight years, 1970-71 to 1977-78, the tax contributions by

drug MNCs have increased by 82 per cent (Rs. 1599.99 lakhs to Rs. 2911.11 lakhs), depicting an average annual rise of 12.26 per cent. Drug MNCs on an average are contributing annually a sizeable amount of Rs. 2004 lakhs as taxes to the Government.

Column 8 in the table shows the absolute amount of dividend distributed each year by companies and column 9 depicts the annual increase in these distributions. The common feature with regard to dividend distribution in the case of all the three groups is a fall in the dividend payments during the two-year period, 1974-76, when the Companies (temporary restriction on dividends) Ordinance was in force. Barring these two years, the dividend payments have risen steadily over the eight years, 1970-71 to 1977-78, in the case of all the three groups. Thus, in the case of first group they rose nearly three-fold (Rs. 21.79 lakhs to Rs. 80.69 lakhs), depicting an average annual rise of 27.45 per cent. In the case of the second group, over the same period the dividend payments rose by 135 per cent (Rs. 113 lakhs to Rs. 265.74 lakhs), indicating an average annual rise of 15.22 per cent. And in the case of the third group, they rose by 63 per cent (Rs. 367.50 lakhs to Rs. 600 lakhs), showing an average annual rise of 9.69 per cent. Thus, the highest growth in dividend payments over the period 1970-71 to 1977-78 occurred in the case of smaller companies in Group I (27.45 per cent) followed by medium-sized companies of Group II (15.22 per cent) and large-sized companies of Group III (9.69 per cent). The aggregate figures for all the three groups show that the dividend payments by foreign drug companies increased by nearly 100 per cent (Rs. 502.29 lakhs to Rs. 946.43 lakhs) over the eight years, 1970-71 to 1977-78, depicting an average annual rise of 11.72 per cent.

Column 10 in the table shows the absolute amount of profits retained every year in the business by three groups of drug companies and column 11 the trends therein over the years. It should be noted that as a result of restriction on the distribution of dividends, the distributed dividends show a decline in 1974-75. This fall in dividend distribution is reflected in a significant increase in retained earnings during the same year. During the next year, however, companies increased their dividend distribution substantially and as a result the retained earnings show a distinct decline. It may also be noted that during the years 1974-76, profitability in the drug industry had a setback. The average for eight years

shows that the retained earnings of three groups of drug companies have risen annually by 9.47 per cent, 15.48 per cent and 13.88 per cent respectively. Thus, the medium-sized companies had the highest annual rise in their retained earnings, followed by large and small-sized companies. The aggregate data for all the three groups show an annual rise of around 10 per cent in retained earnings of drug companies.

Column 12 in the table shows the pattern of pre-tax distribution of profits between taxes, dividends and retained earnings. The eight years' annual average shows that out of every Rs. 100 earned by the first group of drug companies, Rs. 58 account for taxes, Rs. 16 are paid out as dividends and Rs. 26 are ploughed back in the business. In the case of the second group, the distribution is : Rs. 65 as taxes, Rs. 17 as dividends and Rs. 18 as retained earnings. In the case of the third group, the distribution pattern is : Rs. 57 as taxes, Rs. 23 as dividends and Rs. 20 as retained earnings. Thus, after the payment of taxes, the large-sized companies in Group III distribute the highest amount (Rs. 23) as dividends, followed by medium (Rs. 17) and small-sized companies (Rs. 16). As regards retained earnings, the foregoing figures show that the small-sized companies are ploughing back the highest amount (Rs. 26), followed by large (Rs. 20) and medium-sized companies (Rs. 18). The aggregate data for all the three groups show that the pre-tax distribution of profits between taxes, dividends and retained earnings is of the order 60:20:20. That is to say, sixty per cent of the earnings of foreign drug companies are paid out as taxes to the government and the balance is equally distributed between dividends and retained earnings.

Dividend Pay-out Ratios

As stated earlier, we examine in this section four dividend pay-out ratios :

(a) dividends on total and paid-up capital,
(b) dividends on net worth,
(c) dividends on profits before tax, and
(d) dividends on profits after tax.

These ratios appear in Table 5.4 in columns 8-9 (also Figure 5.2).

Separate dividend pay-out ratios on the paid-up component

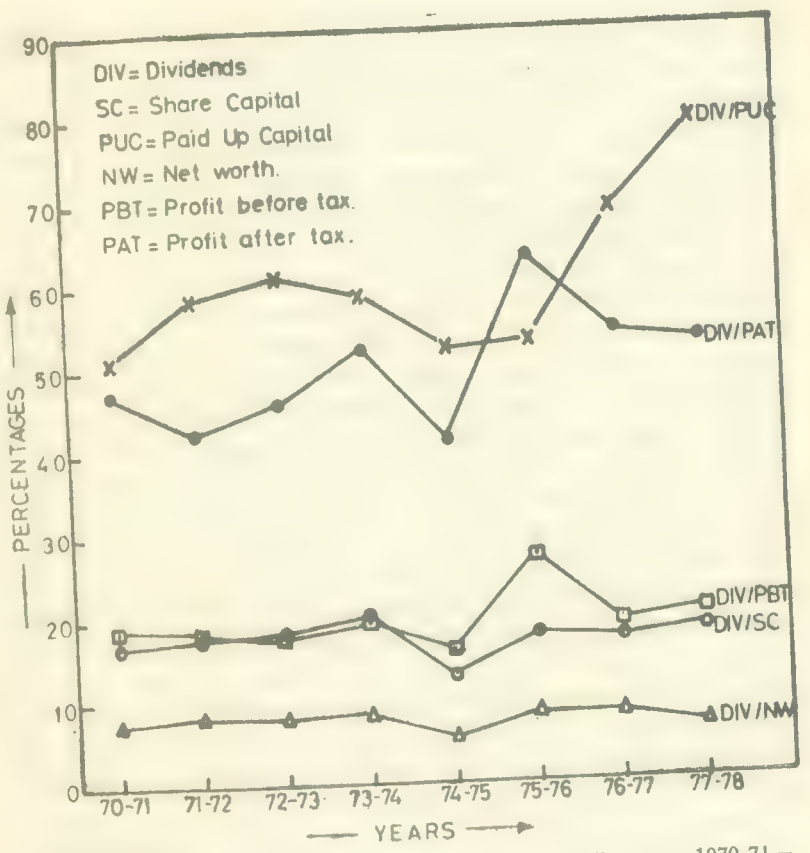


Fig. 5.2 : Dividend rates of pharamaceutical TNCs. All groups, 1970-71—1977-78.

of the share capital are worked out to examine the exact rates of return on the contributed cash component of the share capital by the shareholders. Very often it so happens that owing to rapid capitalisation, the rates of return on share capital tend to decline whereas, in real terms the absolute amount of dividends distributed may be going up.

Columns 13 and 14 in Table 5.4 show the percentage of dividends distributed on the total and paid-up component of the share capital by three groups of drug companies. In the case of all the three groups there is a noticeable decline in this percentage during the two-year period, 1974-76, owing to the restrictions

placed by the government on the declaration of dividends, explained earlier. Barring these two years, the first group of companies show a rise of 7.45 percentage points (6.65 per cent to 14.10 per cent) in their declared dividends on total share capital and a rise of 8.57 percentage points (39.86 per cent to 48.43 per cent) on their paid-up component of the share capital, over the years 1970-71 to 1977-78. The average for this period shows that annually Group I companies distribute 11.33 per cent of dividends on their total share capital and 44.04 per cent of dividends on the paid-up component of the share capital. The second group of companies, on the other hand, show a rise of 7.3 percentage points (19.22 per cent to 26.25 per cent) in their distribution of dividends on total share capital, and a rise of 51.45 percentage points (52.91 per cent to 104.36 per cent), i.e., nearly a 100 per cent rise in their distribution of dividends on the paid-up component of the share capital over the eight years, 1970-71 to 1977-78. The average for this period shows that annually Group II companies are distributing 22.57 per cent of dividends on their total share capital and 74.80 per cent of dividends on the paid-up component of the share capital. The third group, however, show a decline of 3.21 percentage points (19.68 per cent to 16.47 per cent) in their declared dividends on the total share capital but a rise of 25.13 percentage points (52.50 per cent to 77.63 per cent) in their distribution of dividends on the paid-up component of the share capital over the eight-year period, 1970-71 to 1977-78. Thus out of three groups, the second group is distributing the highest percentage of dividends, both on the total and on the paid-up component of its share capital followed by the third and the first groups. It should be pointed out here that a very large rate of dividend distribution on the paid-up component of the share capital signifies that the shareholders have already recovered their original capital contributions and that any further receipt of dividends is an absolute capital gain to them. The absolute and the relative dispersions (Table 5.5) show that the third group is most consistent in its distribution of dividends on the total share capital followed by the second and the first groups. As regards the distribution of dividends on the paid-up component of the share capital, these two statistical measures are least in the case of the first group followed by the third and the second groups. The aggregate figures for all the three groups show that the distribution of

TABLE 5.5

Arithmetic Mean, Absolute and Relative Dispersions of Dividend Rates : 1970-71—1977-78

	Dividend as percentage of				
	PBT	*PAT*	*Share capital*		*Net worth*
			Total	*Paid-up*	
Mean					
I	15.34	38.27	11.33	44.04	5.85
II	16.44	47.69	22.27	74.08	9.14
III	23.14	52.70	17.36	58.60	8.18
I-III	19.79	49.71	17.60	60.16	7.93
Standard Deviation					
I	4.07	12.74	3.60	5.96	1.57
II	1.78	5.03	3.00	16.95	1.24
III	6.59	8.28	2.30	8.81	1.06
I-III	3.09	6.69	1.94	8.81	1.07
Coefficient of Variation					
I	27.00	33.00	32.00	13.53	27.00
II	11.00	11.00	13.00	22.66	13.57
III	28.00	16.00	13.00	15.03	13.00
I-III	16.00	13.00	11.00	14.74	13.00

dividends on the total share capital by foreign drug companies is fairly consistent around 17.60 per cent—also the average for eight years, 1970-71 to 1977-78. But the distribution of dividends on the paid-up component of the share capital over this period shows a rise of 27.75 percentage points (51.08 per cent to 79.03 per cent), the average for which works out to be 60.16 per cent. The absolute and relative dispersions for both the total and the paid-up

component of the share capital show that drug MNCs are fairly consistent in dividend distribution policies on their share capital.

As regards the distribution of dividends on net worth, all the three groups show a fall in the percentage during the two-year period 1974-76, especially in 1975-76. Despite this fall, however, the first group shows an overall rise of 2.63 percentage points (4.26 per cent to 6.89 per cent) in its distribution of dividends on net worth over the eight years, 1970-71 to 1977-78, the average for which works out to be 5.83 per cent. The second and the third groups, on the other hand, do not show any definite increasing or falling trends in their percentage distribution of dividends on net worths. This percentage in the case of both these groups has remained fluctuating around their respective means of eight years, 9.14 per cent and 8.18 per cent. Thus the second group is the largest distributor of dividends on its net worth followed by the third and the first groups. The absolute and relative dispersions show that the large group is most consistent in its distribution of dividends on net worth followed by the second and the first groups. The aggregate figures for all the three groups show that drug MNCs distribute around 8 per cent dividends on their net worth and that they are fairly consistent in their policies towards this distribution.

Finally, two ratios—dividend distribution on profit before tax and profit after tax—remain to be examined. Column 16 in the table shows the distribution of dividends as percentage of profits before tax. Besides a fall in the case of all the three groups during two years, 1974-76, this percentage shows slightly erratic albeit rising trends in the case of the first group, but is rather consistent in the case of the second and third groups. The eight-year average shows that the annual rates of dividend distribution as per cent of pre-tax profits by our three groups of drug companies are respectively 15.34 per cent, 16.45 per cent and 23.14 per cent. Thus, the third group has the largest share of its before-tax profits going as dividends to its shareholders followed by those of the second and the first groups. But the absolute and relative dispersions show that it is the medium-sized companies that are most consistent in their distribution of pre-tax profits as dividends to their shareholders, followed by large and small-sized companies.[9] The aggregate figures for all the three groups show that drug

MNCs distribute around 20 per cent of their pre-tax profits as dividends to their shareholders and that they are fairly consistent in their policies towards this distribution.

Column 17 depicting dividends as percentage of profit after tax indicates fluctuating trends in the case of all the three groups over the eight years, 1970-71 to 1977-78. However, the average, the absolute and the relative dispersions for this period show that the medium-sized companies of Group II are comparatively more consistent in their percentage distribution of after-tax profits as dividends followed by large-sized companies of Group III and small-sized companies of Group I. The annual average for eight years shows that large-sized companies are the highest distributors (52.70 per cent) of their after-tax profits as dividends, followed by medium-sized (47.69 per cent) and small-sized companies (38.27 per cent). The aggregate figures for all the three groups show that foreign drug companies distribute around 50 per cent of their after-tax profits as dividends to their shareholders.

A brief recapitulation of the inter-group performances regarding dividend appropriation policies as reflected in the foregoing ratio analysis would be worthwhile at this juncture before we proceed to examine a detailed breakdown of sources of finance for drug MNCs. To begin with, we found that after the payment of taxes the smaller companies in Group I are distributing the lowest amount of dividends to their shareholders when compared to other two groups. As a result, whereas the retained earnings for this first group when compared to other two groups are the highest, their dividend pay-out ratios are the lowest. A comparison between the second and third groups shows that larger companies in Group III are distributing the highest amount of dividends and consequently their dividend pay-out ratios on profits before tax and profits after tax are also higher compared to those of medium-sized companies of Group II. But the medium-sized companies have the highest dividend pay-out ratio on their share capital and net worth, suggesting a better dividend pay-out performance with a relatively smaller capital base and shareholders' funds.

The discussion in the previous sections thus far only highlights the fact that our earlier contention that drug MNCs owing to their "market power" tend to earn large profits and by way of high amounts of plough-backs and also by way of large amount of local long-term borrowings, ultimately come to own a substantial

part of their assets through locally raised finance, is valid. What remains to be seen is if, besides their large reliance on locally 'generated' and 'raised' finances, these companies have also acted as net exporters of funds by way of excess of remittances over earnings in foreign exchange. We devote the next chapter to a discussion of this vital issue.' Here, in the remaining sections, we examine the overall position regarding sources (and uses) of funds by drug MNCs in India. For the sake of convenience we divide our discussion based on Table 5.2 under the following five headings:

(i) Internal and external sources of finance;
(ii) Internal sources : Share of share capital, reserves and provisions;
(iii) External sources : Share of paid-up capital, long-term loans, short-term loans, and sundry creditors;
(iva) Long-term loans : Share of banking and non-banking sources;
(ivb) Sources of non-banking long-term borrowings;
(va) Short-term loans : Share of banking and non-banking sources;
(vb) Sources of short-term non-banking borrowings.

In the following sections, while ascertaining the extent of reliance of drug companies on various aforementioned sources of finances, we first examine the overall rise or fall in these sources over the eight years under study. This is then followed by an examination of their percentage shares in the total sources of funds and such other relevant issues.

I. Internal and External Sources of Finance

Columns F and G in Table 5.2 show the position regarding total quantum of internal and external finance for drug companies and their growth over the eight-year period, 1970-71 to 1977-78. The table shows that internal funds in the case of the first group of companies have steadily risen (except for 1975-76 when they show a decline over the previous year) from Rs. 334.98 lakhs in 1970-71 to Rs. 1571.66 lakhs in 1977-78, indicating an overall rise of 370 per cent and average annual rise of 33 per cent. Internal funds of the second group of companies on the other hand

increased during this same period from Rs. 1188.83 lakhs to Rs. 3162.50 lakhs, indicating a comparatively smaller overall rise of 166 per cent or an average annual increase of 15 per cent. Finally, the third group during this period registered a rise of 100 per cent in its internal funds, Rs. 3616.62 lakhs to Rs. 7399.43 lakhs, indicating an average annual rise of 11 per cent. Thus in eight years the smaller companies of Group I registered the highest annual growth in their internal funds followed by medium sized companies of Group II and large-sized companies of Group III. Aggregate figures for all the three groups show that foreign drug companies increased their total internal funds from Rs. 5140.43 lakhs in 1970-71 to Rs. 12133.59 lakhs in 1977-78, indicating an overall rise of 136 per cent and average annual rise of 13 per cent.

As regards external funds, the table shows that in the case of the first group these funds increased from Rs. 1085.25 lakhs in 1970-71 to Rs. 2067.69 lakhs in 1977-78, depicting an overall rise of 90 per cent and an average annual rise of 10 per cent. And in the case of the second group they increased from Rs. 1361.11 lakhs to Rs. 2373.38 lakhs, indicating an overall rise of 74 per cent and an average annual rise of 9 per cent. Finally, the third group during this period shows a rise from Rs. 3589.04 lakhs to Rs. 5125.95 lakhs in its external funds, indicating a comparatively smaller overall rise of 43 per cent and average annual rise of 5.5 per cent. Thus, like those for internal funds, Group I companies registered the highest annual increase in their external funds followed by Group II and Group III companies. Aggregate data for all the three groups show that foreign drug companies registered a rise in their external funds from Rs. 6035.40 lakhs in 1970-71 to Rs. 9567.02 lakhs in 1977-78, depicting an overall rise of around 60 per cent and an average annual rise of 7 per cent.

The trends in percentage shares of internal and external sources of funds to total sources of funds for the entire eight-year period under study are reproduced in Table 5.6. These percentages which are fairly consistent over the eight years show the degree of reliance on these two sources of funds by our three groups of drug companies. The average for eight years shows that large companies in Group III have the highest reliance on internal sources (54 per cent), followed by medium-sized companies of Group II (51 per cent) and small-sized companies of Group I

TABLE 5.6

Percentage Shares of Internal Funds (IF) and External Funds (EF) in the Total Finances of Drug MNCs : 1970-71 to 1977-78

Year	*Group I*	*Group II*	*Group III*	*Group I—Group III*
	IF : EF	*IF : EF*	*IF : EF*	*IF : EF*
1970-71	24 : 76	47 : 53	50 : 50	46 : 54
1971-72	26 : 74	49 : 51	52 : 48	48 : 52
1972-73	31 : 69	49 : 51	51 : 49	48 : 52
1973-74	33 : 67	49 : 51	55 : 45	50 : 50
1974-75	42 : 58	46 : 54	53 : 47	49 : 51
1975-76	27 : 73	54 : 46	57 : 43	52 : 48
1976-77	36 : 64	56 : 44	57 : 43	53 : 47
1977-78	43 : 57	57 : 43	59 : 41	56 : 44
1970-71 to 1977-78	33 : 67	51 : 49	54 : 46	50 : 50

Source : Table 5.2.

(33 per cent). Conversely, the smaller companies' reliance on external sources is the highest (67 per cent), followed by medium-sized companies (49 per cent) and large-sized companies (46 per cent). Aggregate data for all the three groups show that the internal and external sources have 50 per cent share each in the total finances of foreign drug companies in India.

II. Internal Sources : Share of Share Capital, Reserves and Provisions

As stated earlier, capitalised part of the share capital, reserves and provisions constitute the internal funds. Table 5.2 shows that over the eight-year period, 1970-71 to 1977-78, the share capital of the first group of drug companies increased from Rs. 79.59 lakhs to Rs. 219.69 lakhs, indicating an overall rise of 176 per cent and an average annual increase of 19 per cent. The share capital of the second group, on the other hand, increased during the same

period from Rs. 144.54 lakhs to Rs. 497.68 lakhs, depicting an overall rise of 244 per cent and an average annual increase of 22 per cent. Finally, the third group registered during this period a rise in its share capital from Rs. 616.43 lakhs to Rs. 2221.18 lakhs, depicting an overall rise of 260 per cent and an average annual increase of 21 per cent. These figures thus show that the capitalisation (of reserves) process is the fastest in the case of larger companies in Group III, with the result that the rise in this component of the share capital constituting a part of the internal funds is the highest for this group followed by medium and small sized companies. The aggregate data for all the three groups show that the capitalised part of the share capital of foreign drug companies increased from Rs. 840.56 lakhs in 1970-71 to Rs. 2938.55 lakhs in 1977-78, indicating 250 per cent rise over these eight years, that is, a rise of 20 per cent per annum.

As regards reserves—the second component of internal funds—the figures for the first group show that the same increased from Rs. 183.39 lakhs in 1970-71 to Rs. 599.83 lakhs in 1977-78, indicating an overall rise of 227 per cent and an average annual rise of 19 per cent. The second group, on the other hand, shows comparatively lower overall rise of 164 per cent (Rs. 617.64 lakhs to Rs. 1627.95 lakhs) and an average annual rise of 15 per cent in its reserves over the eight years. The reserves position of the third group shows erratic fluctuations over the period 1970-71 to 1977-78. Also, between these two ends we notice a relatively small overall size of 13 per cent (Rs. 2592.08 lakhs to Rs. 2936.90 lakhs). Thus the highest percentage increase in reserves over the eight years has been recorded by small companies in Group I followed by medium-sized companies of Group II and large-sized companies of Group III. However, it should be noted that a smaller rise in reserves over these eight years in the case of companies in the second and third groups is owing to their faster capitalisation process than that of the first group. Aggregate position of all the three groups shows that the reserves of foreign drug companies in India registered an overall rise of 52 per cent (Rs. 3393.11 lakhs to Rs. 5164.68 lakhs) over the eight years, indicating an average annual rise of 7 per cent.

Finally we come to provisions, the third constituent of internal funds. In the case of the first group, provisions show very erratic fluctuations, especially between the period 1974-75 to

1976-77. Thus in 1975-76 they stood at a mere Rs. 39.53 lakhs, showing a decline of 94 per cent over the previous year. This year was one of the years of credit squeeze and it is probable that funds from provisions were used by the companies in this group to meet their short-term financial obligations. The very next year, however, i.e., in 1976-77 provisions for this group increased to Rs. 328.24 lakhs, showing a rise of some 730 per cent over the previous year. Between the two end-points, 1970-71 to 1977-78, the provisions for this first group show a rise of 945 per cent—Rs. 72 lakhs to Rs. 752.14 lakhs (the average annual rise is however much higher—147 per cent because of sudden rise of 730 per cent in 1976-77 over 1975-76). As regards the second group, except a fall of 14 per cent in 1974-75 over 1973-74, the rise in provisions has been fairly consistent with the overall position showing an increase of 143 per cent (Rs. 426.65 lakhs in 1970-71 to Rs. 1036.87 lakhs in 1977-78) over the eight-year period under study. The third group shows a fall of 24 per cent in its provisions in 1972-73 over 1971-72, and a fall of 18 per cent in 1976-77 over 1975-76. Barring this decline in two years, the total quantum of provisions for this group rose by 450 per cent (Rs. 408.11 lakhs to Rs. 2241.35 lakhs) over the period 1970-71 to 1977-78. Thus the highest rise in provisions over these eight years was recorded by smaller companies of Group I followed by large companies of Group III and medium-sized companies of Group II. Aggregate position of all the three groups shows that the total provisions of drug companies increased three-and-a-half-fold from Rs. 906.76 lakhs to Rs. 4030.36 lakhs over the eight years, 1970-71 to 1977-78.

The trends in percentage shares of share capital, reserve funds and provisions in the total internal sources of funds of our three groups of drug companies for the entire eight-year period, 1970-71 to 1977-78, are reproduced below in tabular form (Table 5.7). The average for this period shows that in the case of the first group, out of 32 per cent share of internal funds in the total finances, reserves account for 17 per cent, provisions for 10 per cent and the share capital for 5 per cent. In the case of the second group, out of a total of 50 per cent share of internal funds in the total finances, reserves account for 27 per cent, provisions for 17 per cent and the share capital for 6 per cent. Finally, internal funds account for 55 per cent of total finances of companies in the third group and in this the reserves account for 29 per cent share, provisions for 15 per

TABLE 5.7

Percentage Shares of Share Capital (SC), Reserve Funds (RF) and Provisions (PR) in the Total Internal Finances of Drug MNCs : 1970-71 to 1977-78

Year	*Group I*	*Group II*	*Group III*	*Group I-Group III*
	SC:RF:PR	*SC:RF:PR*	*SC:RF:PR*	*SC:RF:PR*
1970-71	6 : 13 : 5	6 : 24 : 17	9 : 36 : 6	6 : 30 : 8
1971-72	6 : 16 : 5	5 : 29 : 15	8 : 28 : 16	7 : 27 : 14
1972-73	5 : 19 : 7	5 : 28 : 16	9 : 31 : 11	8 : 29 : 12
1973-74	5 : 20 : 8	4 : 29 : 16	9 : 33 : 13	7 : 30 : 13
1974-75	5 : 16 : 23	5 : 28 : 12	11 : 30 : 13	8 : 27 : 14
1975-76	7 : 18 : 2	8 : 25 : 21	11 : 25 : 22	10 : 24 : 19
1976-77	7 : 17 : 11	10 : 26 : 20	14 : 26 : 17	12 : 25 : 17
1977-78	6 : 16 : 21	9 : 29 : 19	18 : 23 : 18	14 : 24 : 19
1970-71 to 1977-78	5 : 17 : 10	6 : 27 : 17	11 : 29 : 15	9 : 27 : 15

Source : Table 5.2.

cent and the share capital for 11 per cent. Thus, in the case of all the three groups, reserve funds account for the highest share in the total internal finances followed by provisions and share capital. Aggregate figures for all the three groups show that out of a 51 per cent share of internal funds in the total finances of foreign drug companies in India, reserves account for 27 per cent share, provisions for 15 per cent and share capital for 9 per cent.

III. External Sources : Share of Paid-up Capital, Long-Term Loans, Short-Term Loans and Sundry Creditors

Column A_{11} in Table 5.2 shows the position regarding paid-up capital (the cash component of the share capital) in the total finances of our three groups of drug companies over the eight years 1970-71 to 1977-78. As pointed out earlier during our examination

of capital investment position of drug MNCs, paid-up capital does not show any significant rise over the eight years in the case of any of the three groups. Only in the case of the first group it rose by some 42 per cent, Rs. 248.20 lakhs in 1970-71 to Rs. 352.41 lakhs in 1977-78, indicating an average annual rise of 5.48 per cent. In the case of the second group it rose by only 14 per cent, Rs. 443.37 lakhs to Rs. 504.47 lakhs over this period, depicting an average annual rise of 1.90 per cent. The third group had the lowest rise of only some 2 per cent, Rs. 1391.20 lakhs to Rs. 1420.73 lakhs in its paid-up capital over these eight years, indicating an insignificant average annual rise of 0.28 per cent. Thus, with the exception of the first group which relied on this method for enhancing its capital base, the rise in paid-up capital in the case of the second and third groups of companies is but only insignificant. Aggregate data for all the three groups show that total paid-up capital of drug MNCs in India increased from Rs. 2082.77 lakhs in 1970-71 to Rs. 2277.61 lakhs in 1977-78, representing an overall rise of 9.36 per cent and an average annual rise of only 1.29 per cent.

Long-term loans, the second component of external funds of drug companies, are broadly tapped from two different sources, banks and non-banks. Here we will concentrate on the trends in the aggregate amount of long-term loans from both these sources. In a separate section below we examine the breakdown of long-term borrowings from banking and non-banking sources. Data on total long-term loans in the case of all the three groups show a steady rise over the eight years except for a slight fall during the credit squeeze years of 1974-76. Thus the total long-term loans in the case of the first group of drug companies increased by 136 per cent, Rs. 149.85 lakhs in 1970-71 to Rs. 354.26 lakhs in 1977-78, representing an average annual rise of 15.51 per cent. Total long-term loans during this tenure in the case of the second group of companies increased by 113 per cent, Rs. 142.02 lakhs to Rs. 301.83 lakhs, indicating an average annual rise of 14 per cent. The third group registered the lowest rise of only 38 per cent, Rs. 314.16 lakhs to Rs. 431.55 lakhs in its long-term borrowings during this period, showing an average annual rise of 6.51 per cent. An important point which ought to be noted here is that the total long-term loans show a clear rising trend in the case of all the three groups till 1973-74, i.e., till the first of the two years of implementation of credit squeeze policies. After a fall in the total long-term loans in

these two years, they have again steadily risen in the case of all the groups. However, this recovery seems to be relatively faster in the case of the first two groups than in the case of the third group. Aggregate data for all the three groups show that the total long-term loans of drug companies increased by 80 per cent, Rs. 606.03 lakhs to Rs. 1087.64 lakhs over the period 1970-71 to 1977-78, representing an average annual rise of 9.22 per cent.

Short-term loans, the third component of external finances of drug companies, are also tapped from two broad sources—banks and non-banks. In a separate section below we examine the trends and the extent of reliance of drug MNCs on these two different sources for their requirements of short-term loans. Here we concentrate on the total quantum of short-term loans from both these sources. Trends in absolute amount of total short-term loans over the eight years 1970-71 to 1977-78 depict similar features as those for total long-term loans. After a steady rise till 1973-74, further rise seems to have been checked owing to the credit squeeze policies implemented in 1974. For, the total short-term borrowings show a slight decline from that year onwards in the case of all the three groups. Nevertheless, over the period 1970-71 to 1977-78, all the three groups registered an impressive rise in their total short-term loans. Thus in the case of the first group, total short-term loans during this period increased from Rs. 383.62 lakhs to Rs. 741.73 lakhs, showing an overall and average annual rise of 93 per cent and 11 per cent respectively. In the case of the second group during this period, these loans increased from Rs. 390.16 lakhs to Rs. 644.89 lakhs, depicting an overall and average annual rise of 65 per cent and 8.48 per cent respectively. Finally, during this same period the short-term borrowings of the large companies in the third group increased from Rs. 971.93 lakhs to Rs. 1126.60 lakhs, representing an overall and annual rise of 16 per cent and 2.91 per cent respectively. Thus, despite a decline in the total amount of short-term borrowings between the years, the highest percentage increase in the same over the eight years occurred in the case of the small companies in Group I (11 per cent), followed by medium-sized companies of Group II (8 per cent), and large-sized companies of Group III (3 per cent). Aggregate data for all the three groups show that the total short-term borrowings of foreign drug companies over the eight years increased by 44 per cent,

Rs. 1745.71 lakhs to Rs. 2513.22 lakhs, indicating an average annual rise of 5.92 per cent.

Finally, sundry creditors occurring through trade transactions provide companies with a sizeable amount of working capital. In the case of our three groups of companies, barring a slight fall in some years (except for a relatively larger 22 per cent fall in the case of the first group in 1972-73 over 1971-72), sundry creditors show a consistent rise over the eight years 1970-71 to 1977-78. Thus, in the case of the first group over these eight years they rose by 104 per cent (Rs. 303.58 lakhs to Rs. 619.29 lakhs), in the case of the second group by 139 per cent (Rs. 385.56 lakhs to Rs. 922.19 lakhs) and in the case of the third group by 135 per cent (Rs. 911.75 lakhs to Rs. 2147.07 lakhs). Aggregate data for all the three groups show that net sundry creditors of drug companies increased by 130 per cent (Rs. 1600.89 lakhs to Rs. 3688.55 lakhs) over the eight years, indicating an average annual rise of 13.64 per cent.

In the preceding sections we examined the trends in increase in the absolute amount of four constituents of external finances—paid-up capital, long-term loans, short-term loans and sundry creditors, over the period 1970-71 to 1977-78. The percentage share of these constituents in the total external finances of the three groups over these eight years are reproduced below in tabular form (Table 5.8). The feature common to all the three groups is a decline in the percentage shares of paid-up capital in the total external finances of drug companies. But the percentage shares of long-term loans, short-term loans and sundry creditors in the total external finances have remained fairly consistent over the eight years except with a slight rise in the percentage share of sundry creditors in the case of the third group. Thus, out of 67 per cent share of external funds in the total finances of the first group, share capital accounts for 13 per cent, long-term loans for 11 per cent, short-term loans for 25 per cent and sundry creditors for 18 per cent. In the case of the second group, out of 50 per cent share of external funds in the total finances, share capital accounts for 12 per cent, long-term loans for 6 per cent, short-term loans for 16 per cent and sundry creditors for 16 per cent. Finally, in the case of the third group, external funds account for 46 per cent of the total finances; the share of paid-up capital in this is 15 per cent, that of long-term loans 5 per cent, short-term loans 12 per cent and sundry creditors 14 per cent. An important

TABLE 5.8

Percentage Shares of Paid-up Capital (PU), Long-Term Loans (LT), Short-Term Loans (ST) and Sundry Creditors (SC) in the Total External Finances of Drug MNCs : 1970-71 to 1977-78

Year	*Group I*	*Group II*	*Group III*	*Group I-Group III*
	PU:LT:ST:SC	*PU:LT:ST:SC*	*PU:LT:ST:SC*	*PU:LT:ST:SC*
1970-71	17:11:27:21	17:6:15:15	19:4:13:13	19:5:16:14
1971-72	15:13:26:20	16:5:16:13	17:4:14:12	17:6:16:14
1972-73	14:12:28:14	14:5:17:15	16:6:15:12	15:7:17:13
1973-74	13:15:25:15	12:5:19:15	16:6:12:12	14:7:16:13
1974-75	11: 9:24:16	11:7:18:18	13:5:13:16	12:6:16:16
1975-76	14:10:26:23	10:6:15:16	13:4:11:15	12:5:14:16
1976-77	11:10:24:19	10:5:13:16	12:4:10:17	11:5:13:17
1977-78	10:10:20:17	9:5:12:17	11:3: 9:17	11:5:12:17
1970-71 to 1977-78	13:11:25:18	12:6:16:16	15:5:12:14	14:6:15:15

Source : Table 5.2.

feature which these data depict is a comparatively high reliance on short-term borrowings as a source of external finance in the case of all the three groups. We revert to this issue below. Aggregate data for all the three groups show that out of 50 per cent share of external funds in the total finances of foreign drug companies, paid-up capital accounts for 14 per cent, long-term loans for 6 per cent, short-term loans and sundry creditors for 15 per cent share each.

IV-a. Long Term Loans : Share of Banking and Non-banking Sources

As mentioned earlier, long-term loans are broadly tapped from two sources, banks and non-banks. The trends in the long-term

borrowings from these two sources by all the three groups of companies appear under column C in Table 5.2. The table shows that there had been a distinct emphasis on banks for long-term loans by all the three groups till the implementation of credit squeeze policies in 1974, after which the emphasis for long-term borrowings shifted to non-banking sources. Thus in the case of the first group of companies, the long-term borrowings from banks which were Rs. 103.69 lakhs in 1970-71 gradually increased to Rs. 143.98 lakhs in 1972-73, but then began to decline and were placed at only Rs. 20.63 lakhs in 1977-78. The long-term borrowings from non-banking sources, on the other hand, which were only Rs. 46.16 lakhs in 1970-71 increased to Rs. 167.90 lakhs in 1973-74 and further to Rs. 333.63 lakhs in 1977-78. Thus in the case of this first group, during the eight-year period, the long-term loans from banks declined by 80 per cent and those from non-banking borrowings increased by 600 per cent. In the case of companies in the second group, the total long-term borrowings from banks which were already relatively small in 1970-71 (Rs. 35 lakhs), became zero in 1973-74 but then gradually picked up and were placed at Rs. 31.00 lakhs by the end of 1977-78. But the borrowings from non-banking sources for this group increased steadily from Rs. 107.02 lakhs in 1970-71 to Rs. 270.83 lakhs in 1977-78 —a rise of some 150 per cent. The trends in borrowings from banking and non-banking sources for the third group of companies are similar to those of the first two groups. Borrowings from banks for this group which were Rs. 120 lakhs in 1970-71 declined to Rs. 108.50 lakhs in 1973-74 but dipped still sharply to only Rs. 25.00 lakhs in 1977-78. The non-banking borrowings, on the other hand, increased steadily from Rs. 194.16 lakhs in 1970-71 to Rs. 406.55 lakhs in 1977-78. Thus for this group, during the eight years, the long-term borrowings from banks declined by 79 per cent but those from non-banks increased by 110 per cent.

The percentage shares depicting the trends in long-term banking and non-banking sources of funds for the eight-year period for all the three groups of companies are reproduced in Table 5.9.

The data for the period 1970-71 to 1977-78 in Table 5.9 show that, on average, long-term borrowings constitute respectively 11 per cent, 6 per cent and 5 per cent share in the total finances of our three groups of drug companies. And the shares of banks

TABLE 5.9

Percentage Share of Long-Term Banking (BA) and Non-banking (NB) Sources in the Total Sources of Finances of Drug MNCs : 1970-71 to 1977-78

Year	*Group I*	*Group II*	*Group III*	*Group I—Group III*
	BA :NB	*BA :NB*	*BA :NB*	*BA :NB*
1970-71	7 : 3	1 :4	2 :3	2 :3
1971-72	9 : 4	1 :4	2 :2	3 :3
1972-73	8 : 4	2 :7	1 :5	2 :4
1973-74	7 : 8	0 :5	1 :5	2 :6
1974-75	0.58: 7	0.67:7	1 :5	2 :5
1975-76	1 : 9	0.94:5	0.06:4	1 :5
1976-77	0.66:10	0.80:4	0.21:4	0.42:5
1977-78	0.56: 9	0.56:5	0.20:3	0.45:5
1970-71 to 1977-78	4 : 7	0.87:5	0.93:4	2 :5

Source : Table 5.2.

and non-bank sources in this total long-term borrowings for the three groups are respectively 4 per cent and 7 per cent; 1 per cent and 5 per cent; and 1 per cent and 4 per cent. The aggregate data for all the three groups show that long-term loans account for 7 per cent of total finances of foreign drug companies in India. And the share of banks in this is 2 per cent and that of non-bank sources, 5 per cent. However, the striking feature to be noted in Table 5.9 is the agility with which the drug companies could shift to non-banking sources for their long-term financial requirements from 1974-75 onwards when the credit squeeze policies were in force. There is absolutely no fall in the total quantum of long-term borrowings in the case of any of the three groups although the degree of reliance on this source varies among different groups. This, among other things, indicates the futility of government

attempts to restrict the credit supply to the private corporate sector with the help of restrictive ordinances. The results here vividly show as to how companies easily switched over to unregulated non-banking sources to meet their requirements of long term funds.

IV.b. Non-banking Sources of Long-Term Borrowings

There are a number of non-banking sources which can be tapped for meeting the long-term requirements of funds by companies operating in India. These include government and semi-government bodies, statutory financial corporations (IFC, SFC, etc.), Indian institutional agencies (IDBI, ICICI, NIDC, LIC, etc.), foreign institutional agencies and Indian and foreign companies. A detailed picture depicting the breakdown of non-banking long-term sources of funds by our three groups of drug companies over the three-year period 1975-76 to 1977-78 appear in Table 5.10. This table, however, shows that none of the aforementioned sources are significant for long-term loans in the case of foreign drug companies. The table instead shows an overwhelming reliance on public deposits as a source of long term non-banking funds. The three-year average shows that the reliance of Group I companies on public deposits as a source of non-banking long-term loans is 64 per cent, that of the second group is 86 per cent and that of the third group is as high as 98 per cent. Thus, only the smaller companies in Group I tapped a relatively larger 36 per cent of their total long-term non-banking finances from sources other than public deposits. Out of this, Indian institutional agencies accounted for around 15 per cent share, statutory financial corporations 13 per cent, foreign institutional agencies 7 per cent, and Indian companies 2 per cent. The second and third groups' 14 per cent and 2 per cent reliance on non-public deposits for long-term funds is shared primarily by Indian institutional agencies. Aggregate data for the three years show that foreign drug companies in India rely upto 85 per cent on public deposits for their non-banking long-term funds, the balance being shared mainly by statutory financial corporations and Indian institutional agencies.

V.a. Short-Term Loans : Share of Banking and Non-banking Sources

Short-term borrowings are also tapped from two broad

sources, banks and non-banks. Row E-II in Table 5.2 shows the degree of reliance on these two sources by our three groups of drug companies. Data in these rows show that banks account for a large proportion of the total short-term credit of drug companies. And, secondly, the reliance of drug companies on this source has increased, especially from 1974-75 onwards. Thus the total short-term funds from this source in the case of the first group of companies registered a nearly two-fold rise from Rs. 234.85 lakhs in 1970-71 to Rs. 695.98 lakhs in 1977-78. But the borrowings from non-banking sources during this period declined from Rs. 148.77 lakhs in 1970-71 to Rs. 58.10 lakhs in 1975-76 and further to Rs. 45.75 lakhs in 1977-78, showing a fall of 69 per cent over 1970-71. A similar situation prevailed in the case of the second and third groups of companies. Total bank borrowings in the case of the second group rose from Rs. 287.95 lakhs in 1970-71 to Rs. 641.25 lakhs in 1977-78, depicting a 123 per cent rise. But borrowings from non-banking sources declined from Rs. 102.21 lakhs in 1970-71 to Rs. 72.08 lakhs in 1975-76 and further to only Rs. 3.64 lakhs in 1977-78, showing a nearly 100 per cent fall over 1970-71. Total bank borrowings in the case of the third group which were Rs. 731.29 lakhs in 1970-71 increased to Rs. 1004.60 lakhs in 1977-78, indicating some 37 per cent rise. But borrowings from non-bank sources declined from Rs. 240.64 lakhs in 1970-71 to Rs. 147.03 lakhs in 1975-76 and further to Rs. 122.00 lakhs in 1977-78—a fall of around 50 per cent over 1970-71. The combined position of all the three groups shows that whereas, the short-term borrowings from banks during 1970-71 to 1977-78 increased by 87 per cent (Rs. 1254.09 lakhs to Rs. 2341.83 lakhs), the borrowings from non-banking sources during the same period declined by 65 per cent (Rs. 491.62 lakhs to Rs. 171.39 lakhs). We suggest the following as a probable explanation for this shift of emphasis for short-term loans from non-banking to banking sources.

During our discussion on long-term banking and non-banking sources of funds for our three groups of drug companies, we noted that during and after the period of credit squeeze (1974-76), the long-term borrowings from banks had declined and those from non-banking sources, especially from the public deposits, had risen. And during our discussion on short-term banking and non-banking sources we observed that during the period of credit squeeze, the short-term borrowings of these companies from banks had risen

TABLE

Non-banking Sources of Long-Term

Group & year	*Statutory financial corporations*	*Institutional Agencies*	
		Indian	*Foreign*
	1	*2*	*3*
Group I			
1975-76	33.03 (14.67)	40.00 (17.77)	—
1976-77	27.31 (9.69)	35.00 (12.42)	32.00 (11.35)
1977-78	51.40 (15.41)	47.00 (14.09)	24.00 (7.19)
	111.74 (13.29)	122.00 (14.51)	56.00 (6.66)
Group II			
1975-76	—	12.53 (5.51)	7.81 (3.43)
1976-77	—	16.89 (7.36)	—
1977-78	—	62.96 (23.25)	—
	—	92.38 (12.69)	7.81 (1.07)
Group III			
1975-76	—	2.64 (0.58)	15.91 (3.49)
1976-77	—	1.87 (0.41)	—
1977-78	—	1.67 (0.41)	—
	—	6.18 (0.47)	15.91 (1.21)
Groups I-III			
1975-76	33.03 (3.64)	55.17 (6.08)	23.72 (2.61)
1976-77	27.31 (2.83)	53.76 (5.57)	32.00 (3.32)
1977-78	51.40 (5.08)	111.63 (11.04)	24.00 (2.37)
	111.74 (3.87)	220.56 (7.65)	79.72 (2.76)

Note : Figures in brackets indicate percentages of the total in that year.

Source : Company Annual Accounts/Reports.

5.10

Borrowings of Drug MNCs 1975-76—1977-78

(*Rs. in lakhs*)

Borrowings from		*Public deposits*	*Total*
Indian companies	*Foreign companies*		
4	*5*	*6*	*7*
—	—	152.13 (67.57)	225.16
13.50 (4.79)	—	174.09 (61.76)	281.90
—	—	211.23 (63.31)	333.63
13.50 (1.61)	—	537.45 (63.93)	840.69
—	—	207.25 (91.06)	227.59
—	—	212.45 (92.64)	229.34
—	—	207.87 (76.75)	270.83
—	—	627.57 (86.23)	727.76
—	—	436.72 (95.93)	455.27
—	—	452.06 (99.59)	453.93
—	—	404.88 (99.59)	406.55
—	—	1293.66 (98.32)	1315.75
—	—	796.10 (87.67)	908.02
13.50 (1.40)	—	838.60 (86.89)	965.17
—	—	823.98 (81.50)	1011.01
13.50 (0.47)	—	2458.68 (85.25)	2884.20

and those from non-banking sources, especially deposits from the public, had fallen. The reasons for this change in emphasis on the sources of finances could be as follows. With the implementation of credit squeeze policies involving restrictions on long-term bank borrowings, the companies resort to long-term public deposits. An increased subscription of these deposits which offer higher interest rates, leaves less scope for mopping up further deposits for short-term periods which usually carry low interest rates compared to those for long-term deposits. The companies then revert to banks for their short-term needs of funds which are rather easily procured against inventories. These loans are also very often renewed every year. As stated, this is only a probable explanation subject to further investigation.

V.b. Non-banking Sources of Short-Term Borrowings of Drug MNCs

A detailed presentation of data on the sources of non-banking short-term credit for our three groups of companies over the period 1975-76 to 1977-78 appears below in Table 5.11. This table indicates the paramount importance of public deposits as a source of short-term non-banking credit for drug companies. The government and semi-government bodies, statutory financial corporations and foreign institutional agencies have zero share of short-term credit in the total short-term non-banking borrowings of drug companies. And the remaining sources—Indian institutional agencies and Indian and foreign companies—cater to only a fraction of total short-term non-banking credit of these companies. The average for the three years shows that the reliance on public deposits as a source of short-term non-banking credit is 91 per cent for the first group, 84 per cent for the second group and 100 per cent for the third group. In the case of the first group, the balance 9 per cent is provided by Indian companies. In the case of the second group, the balance 16 per cent is shared by foreign (9 per cent) and Indian companies (7 per cent). The aggregate figures for all the three groups show that public deposits account for 96 per cent of their total short-term non-banking finance, the balance 4 per cent being shared by Indian and foreign companies and Indian institutional agencies.

Before we proceed further, two relevant observations are required to be made at this juncture. The first is concerning the

short-term borrowings of foreign drug companies and the second concerns the pros and cons of public deposits raised by these companies.

It is sometimes argued that the short-term loans, although shown as such on paper, are renewed year after year and hence in actual terms they become long-term borrowing. This is said to be a widely followed practice by companies. A finance manager of one of the leading drug transnationals in India confirmed the validity of this process, to this author. Although there is no tangible evidence to prove this practice of companies' utilising short-term loans for long-term purposes, the ratio of share capital plus long-term borrowings to net fixed assets, does to some extent reveal whether or not the short-term borrowings have been used to acquire fixed assets. For, normally, share capital plus long-term loans should equal fixed assets. If the ratio is less than one, the indication is that short-term borrowings have been used to acquire fixed assets. If the ratio is greater than one, the indication is that the working capital includes part of the share capital and long-term loans. A variation of ratio of 1:1 may suggest increase in share capital and long-term borrowings having no significant corresponding increase in capital expenditure on fixed assets.

Table 5.12 presents the ratio of paid-up capital plus long-term loans to net fixed assets over the eight-year period 1970-71 to 1977-78 for our three groups of companies. The table shows that this ratio is slightly less than the one in the case of small companies of Group I, indicating the possibility of these companies having acquired fixed assets with the help of short-term loans. The ratio in the case of the second group of companies over the eight years is seen fluctuating around one, suggesting that no significant corresponding increase in fixed assets has occurred with an increase in share capital and long-term loans. And, finally, the ratio is usually greater than one over the period 1970-71 to 1977-78 in the case of large companies of Group III, indicating that the working capital for this set of large companies includes part of share capital and long-term loans.

Coming to the issue of public deposits, there are a number of reasons which induce the depositors and the companies to resort to them. The first basic reason is the differential rates of interests on these deposits offered by commercial banks and non-banking

TABLE 5.11

Non-banking Sources of Short-Term Borrowings of Drug MNCs : 1975-76 to 1977-78

(Rs. in lakhs)

Group & Year	*Institutional agencies*		*Borrowings from*		*Public deposits*	*Total*
	Indian	*Foreign*	*Indian companies*	*Foreign companies*		
	1	*2*	*3*	*4*	*5*	*6*
Group I						
1975-76	—	—	15.00 (25.82)	—	43.10 (74.18)	58.10
1976-77	—	—	—	—	57.94 (100.00)	57.94
1977-78	—	—	—	—	45.75 (100.00)	45.75
Total	—	—	15.00 (9.27)	—	146.79 (90.73)	161.79
Group II						
1975-76	5.12 (7.10)	—	—	—	66.96 (92.90)	72.08
1976-77	—	—	—	3.64 (100.00)	—	3.64
1977-78	—	—	—	3.64 (100.00)	—	3.64
Total	5.12 (6.45)	—	—	7.28 (9.17)	66.96 (84.38)	79.36

Group III						
1975-76	—	—	—	—	147.08 (100.00)	147.08
1976-77	—	—	—	—	135.37 (100.00)	135.37
1977-78	—	—	—	—	122.00 (100.00)	122.00
Total	—	—	—	—	404.45 (100.00)	404.45
Groups I-III						
1975-76	5.12 (1.85)	—	15.00 (5.41)	—	257.14 (92.74)	277.26
1976-77	—	—	—	3.64 (1.85)	193.31 (98.15)	196.95
1977-78	—	—	—	3.64 (2.12)	167.75 (97.88)	171.39
Total	5.12 (0.79)	—	15.00 (2.32)	7.28 (1.13)	618.20 (95.76)	645.60

Note : Figures in the brackets indicate percentages of total for that year.
Source : Company Annual Accounts/Reports.

TABLE 5.12

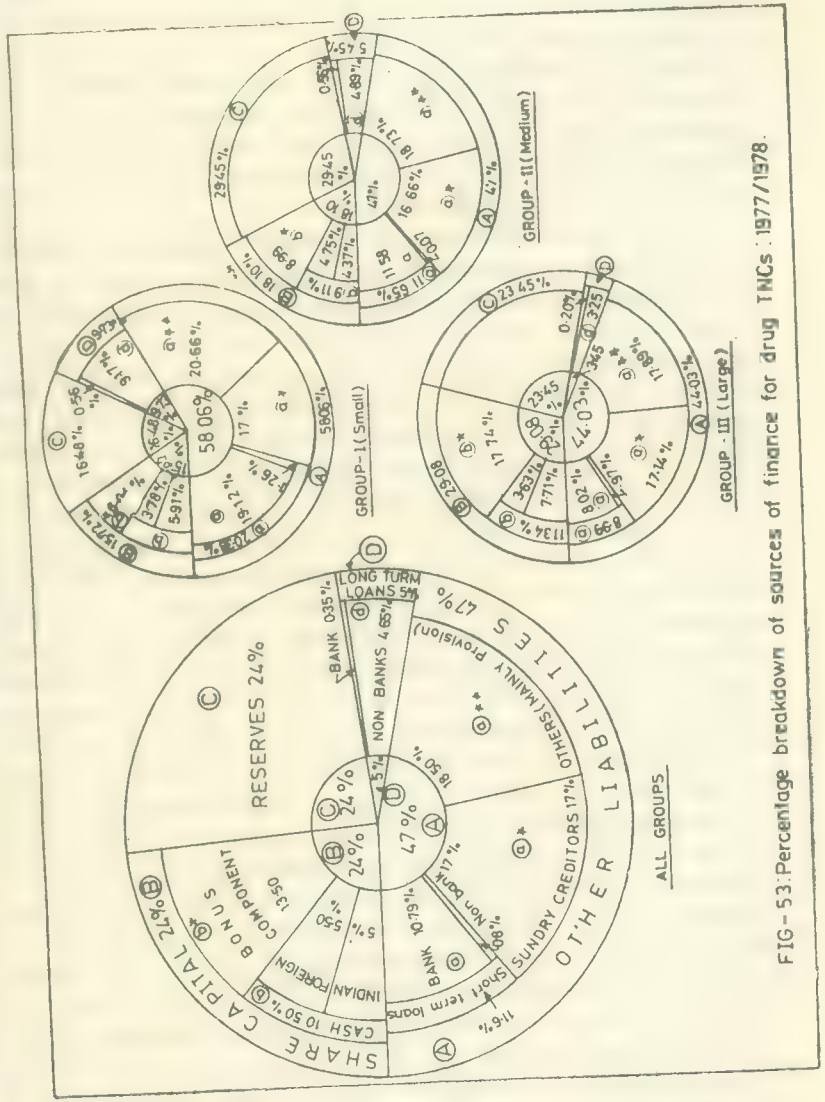
Ratio of Share Capital plus Long-Term Borrowings to Net Fixed Assets—1970-71 to 1977-78

Year	*Group I*	*Group II*	*Group III*	*Group I—Group III*
1970-71	0.91	1.10	1.04	1.03
1971-72	0.97	1.08	1.01	1.02
1972-73	0.94	0.96	1.17	1.09
1973-74	0.99	0.91	1.15	1.06
1974-75	0.88	1.03	1.19	1.10
1975-76	1.03	1.02	1.16	1.10
1976-77	0.99	1.08	1.31	1.20
1977-78	1.03	1.03	1.46	1.27
1970-71—1977-78	0.97	1.03	1.19	1.11

Source : Table 5.2 and Company Annual Accounts/Reports.

companies. The companies, especially the new companies, soliciting deposits from the public offer higher interest rates than those prevailing in the market. Whereas, the interest rates on deposits of commercial banks are regulated by the central bank, till recently there was no direct regulation of the interest rates paid by non-banking companies (NBCs) on deposits raised by them.[10] Secondly, since no collateral security is needed for these deposits they are rather easy to raise on the part of the companies. Thirdly, an added advantage of these deposits is that no obligations are placed over their uses. Finally, as we noticed earlier, public deposits become a potential source of funds during the tenure of government's credit squeeze policies.

The objections to public deposits arise out of the fact that they distort the interest rate pattern and raise funds at the cost of banks. Secondly, since these deposits are unsecured, depositors have no



assurance of getting back their money in the event of a company's failure.[11] Thirdly, it is said that the funds raised by way of public deposits are often used for meeting margin requirements stipulated by banks on their advances, thus defeating the purpose underlying the credit control measures. Finally, it is alleged that these deposits are also used, particularly by trading companies, for speculative hoardings of commodities resulting in inflationary pressures. Since the end use of such funds cannot be easily controlled, they are likely to be diverted into non-priority sectors and used for unproductive purposes.[12]

A substantial increase in company deposits from the public poses a threat not so much to the bank deposits but to credit planning and effective monetary policy. The committee on public deposits pointed out that the dependence of non-banking non-financial companies on deposits has tended to increase from nearly Rs. 700 crores at the end of March 1972 to Rs. 1300 crores at the end of March 1975. This means on average these companies tapped Rs. 200 crores per year from this source. The implications of such a high quantum of public deposits could be serious for they can distort Plan priorities for credit allocation and dilute the effectiveness of a contractionary monetary policy. The whole objective of reducing sectoral and regional imbalances in credit allocation could be defeated and regional disparities accentuated. An effective measure to check the unproductive flow of public deposits would be to prohibit non-priority companies from accepting deposits from public.

Before we turn to the next section on uses of funds, it would be interesting to quote briefly some statistics highlighting the concentrative nature of public deposits in India. The latest survey by the RBI[13] shows that by the end of 1976, out of 5640 reporting companies, 1389 (25 per cent) public limited non-financial companies held 67.3 per cent (Rs. 367 crores out of a total of Rs. 545 crores) deposits of all non-banking companies; 490 (8.7 per cent) public limited financial companies held 12.9 per cent (Rs. 70.3 crores), 53 (0.94 per cent) public limited miscellaneous non-banking companies held 1.8 per cent (Rs. 10 crores) share of public deposits of all NBCs. The remaining 18 per cent of the deposits (Rs. 98 crores) were shared by 2200 private limited non-financial companies which held 9 per cent (Rs. 49.3 crores) share, 903 financial companies which held 3.7 per cent share (Rs. 20.4 crores) and 605 miscellaneous non-banking companies which held 5.1 per cent share (Rs. 28 crores) of total public deposits.

Uses of Funds by Drug MNCs

Funds are put to a variety of uses by firms. These include uses of funds for the expansion of fixed assets, holding of inventories, investment in industrial securities, as loans and advances to subsidiaries and to other companies under the same management or as deferred payments, deposit balances with governments and other parties or as debtor balances. Besides, cash and bank balances represent readily available liquid funds maintained by companies to meet their day-to-day obligations. The mode of utilisation of funds depends largely upon the nature of the industry the firm is engaged in. For instance, if the industry is highly capital-intensive, a large portion of funds either generated internally or raised externally, would go into the formation of net fixed assets. And in case of firms engaged in such activities as construction, a large portion of funds may be blocked in inventories.

Table 5.13 depicts the position regarding sources and uses of funds (also Figure 5.4) for uses of funds and net capital formation by our three groups of drug companies over the eight-year period. Column 2 represents the total amount of funds available each year, column 3 the increase therein over the previous year, and columns 4 to 7 the shares of internal and external sources in this increase. The uses side shows the amount of funds used in the formation of net fixed assets (col. 8), inventories (col. 10), and the amount going out as debtor balances (col. 12). The last column on the uses side (col. 14) under the heading 'others' includes cash and bank balance, investments and other miscellaneous assets. However, 90 per cent of the total amount under this heading is accounted for by cash and bank balances. Column 16 shows the position regarding net capital formation. Since we have already dealt in detail with the sources of funds, we concentrate below on an explanation of the pattern of uses of funds by these companies.

As regards the first group, the average for eight years shows that 17 per cent of the total additional funds raised every year are used for the expansion of fixed assets, 34 per cent are held up in inventories, 26 per cent go out as debtor balances and 23 per cent are held as cash and bank balances. An important point worthy of note is the effect of credit squeeze on this group. During the

TABLE 5.13

Uses of Funds by Drug MNCs: 1970-71 to 1977-78

Particulars	Sources					
	Total funds	Increase over the previous year	Increase through internal sources		Increase through external sources	
			Total	Percentage	Total	Percentage
1	2	3	4	5	6	7
			Group I			
1970-71	1420.23	—	—	—	—	—
1971-72	1657.91	237.68	97.57	41.05	140.11	58.95
1972-73	1780.91	123.00	125.22	101.80	—2.22	—1.80
1973-74	2049.20	268.29	111.26	41.47	157.03	58.53
1974-75	3073.45	1024.25	615.57	60.10	408.68	39.90
1975-76	2446.98	—626.47	—615.50	—98.25	—10.97	—1.75
1976-77	2959.08	512.10	383.70	74.93	128.40	25.07
1977-78	3639.35	680.27	518.86	76.27	161.41	23.73
	—	2219.12	1236.68	55.73	982.44	44.27

(*Rs./Lakhs*)

	Uses								Net capital formation (8+10)
	Net fixed assets		Inventories		Debtor balances		Others		
	Total	Percentage	Total	Percentage	Total	Percentage	Total	Percentage	
1	8	9	10	11	12	13	14	15	16
				Group I (Contd.)					
1970-71	—	—	—	—	—	—	—	—	—
1971-72	50.46	21.23	130.91	55.07	91.72	38.59	—35.41	—14.90	181.37
1972-73	20.99	17.07	68.31	55.54	39.30	31.95	—5.60	—4.55	89.30
1973-74	66.83	24.91	83.82	31.24	20.89	7.79	96.75	36.06	150.65
1974-75	71.08	6.94	280.68	27.40	92.81	9.06	579.68	56.60	351.76
1975-76	3.11	0.50	58.17	9.29	66.14	10.56	—753.89	—120.34	61.28
1976-77	123.58	24.13	28.15	5.50	132.41	25.86	227.96	44.51	151.73
1977-78	38.64	5.68	113.73	16.72	124.44	18.30	403.46	59.31	152.37
	374.69	16.88	763.77	34.42	567.71	25.58	512.95	23.12	1138.46

(*Contd.*)

TABLE 5.13 (*Contd.*)

1	2	3	4	5	6	7
			Group II			
1970-71	2549.94	—	—	—	—	—
1971-72	2850.17	300.23	204.92	68.25	95.31	31.75
1972-73	3333.07	482.90	239.67	49.63	243.23	50.37
1973-74	3970.12	637.05	308.57	48.44	328.48	51.56
1974-75	4488.25	518.13	119.96	23.16	398.17	76.84
1975-76	4905.48	417.23	568.51	136.26	—151.28	—36.26
1976-77	5144.40	238.92	250.79	104.97	—11.87	—4.97
1977-78	5535.88	391.48	281.25	71.84	110.23	28.16
	—	2985.94	1973.67	66.10	1012.27	33.90

(*Rs./Lakhs*)

1	8	9	10	11	12	13	14	15	16
				Group II (Contd.)					
1970-71	—	—	—	—	—	—	—	—	—
1971-72	29.67	9.88	117.49	39.13	21.28	7.09	131.79	43.90	147.16
1972-73	108.90	22.55	246.55	51.06	52.00	10.77	75.45	15.62	355.45
1973-74	127.10	19.95	127.00	19.94	109.25	17.15	273.70	42.96	254.10
1974-75	107.05	20.66	321.74	62.10	56.78	10.96	32.56	6.28	428.79
1975-76	83.72	20.07	68.17	16.34	82.25	19.71	183.07	43.88	151.91
1976-77	45.94	19.23	131.16	54.90	—75.83	—31.74	137.65	57.61	177.10
1977-78	104.77	26.76	330.46	84.41	59.13	15.10	—102.88	—26.28	435.23
	607.15	20.33	1342.59	44.96	304.86	10.21	731.34	24.49	1949.74

(*Contd.*)

TABLE 5.13 (*Contd.*)

1	2	3	4	5	6	7
			Group III			
1970-71	7205.66	—	—	—	—	—
1971-72	8009.83	804.17	544.65	67.73	259.52	32.27
1972-73	8691.89	682.06	312.91	45.88	369.15	54.12
1973-74	8961.54	269.65	431.38	159.98	—161.73	—59.98
1974-75	10390.23	1428.69	627.27	43.91	801.42	56.09
1975-76	10955.83	565.60	739.35	130.72	—173.75	—30.72
1976-77	11650.96	695.13	348.37	50.12	346.76	49.88
1977-78	12525.38	874.42	778.88	89.07	95.54	10.93
	—	5319.72	3782.81	71.11	1536.91	28.89

(*Rs./Lakhs*)

1	8	9	10	11	12	13	14	15	16
				Group III (Contd.)					
1970-71	—	—	—	—	—	—	—	—	—
1971-72	71.43	8.88	—326.18	—40.56	241.95	30.09	816.97	101.59	—254.75
1972-73	7.61	1.12	381.10	55.87	108.75	15.94	184.60	27.07	388.71
1973-74	68.48	25.40	173.25	64.25	—23.79	—8.82	51.71	19.18	241.73
1974-75	113.79	7.96	1162.00	81.33	23.08	1.62	129.82	9.09	1275.79
1975-76	133.03	23.52	192.46	34.03	80.60	14.25	159.51	28.20	325.49
1976-77	81.00	11.65	191.05	27.48	407.84	58.67	15.24	2.19	272.05
1977-78	68.10	7.79	372.73	42.63	352.21	40.28	81.38	9.31	440.83
	543.44	10.22	2146.41	40.35	1190.64	22.38	1439.23	27.05	2689.85

(*Contd.*)

TABLE 5.13 (*Contd.*)

1	2	3	4	5	6	7
			Groups I-III			
1970-71	11175.83	—	—	—	—	—
1971-72	12517.91	1342.08	847.14	63.12	494.94	36.88
1972-73	13806.87	1287.96	677.80	52.63	610.16	47.37
1973-74	14980.86	1174.99	851.21	72.44	323.78	27.56
1974-75	17951.33	2971.07	1362.80	45.86	1608.27	54.13
1975-76	18308.29	356.36	692.36	194.29	—336.00	—94.29
1976-77	19754.44	1446.15	982.86	67.96	463.29	32.04
1977-78	21700.61	1946.17	1578.99	81.13	367.18	18.87
	—	10524.78	6993.16	66.44	3531.62	33.56

(*Rs./Lakhs*)

1	8	9	10	11	12	13	14	15	16
				Groups I-III (Contd.)					
1970-71	—	—	—	—	—	—	—	—	—
1971-72	151.56	11.29	—77.78	—5.80	354.95	26.45	913.35	68.05	73.78
1972-73	137.50	10.68	695.96	54.04	200.05	15.53	254.45	19.75	833.46
1973-74	262.41	22.33	384.07	32.69	106.35	9.05	422.16	35.93	646.48
1974-75	291.92	9.83	1764.42	59.38	172.67	5.81	742.06	24.98	2056.34
1975-76	219.86	61.70	318.82	89.47	228.99	64.26	—411.31	—115.42	538.68
1976-77	250.52	17.32	350.36	24.23	464.42	32.11	380.85	26.34	600.88
1977-78	211.51	10.87	816.92	41.98	535.78	27.53	381.96	19.63	1028.43
	1525.28	14.49	4252.77	40.41	2063.21	19.60	2683.52	25.50	5778.05

Source : **Company Annual Accounts/Reports.**

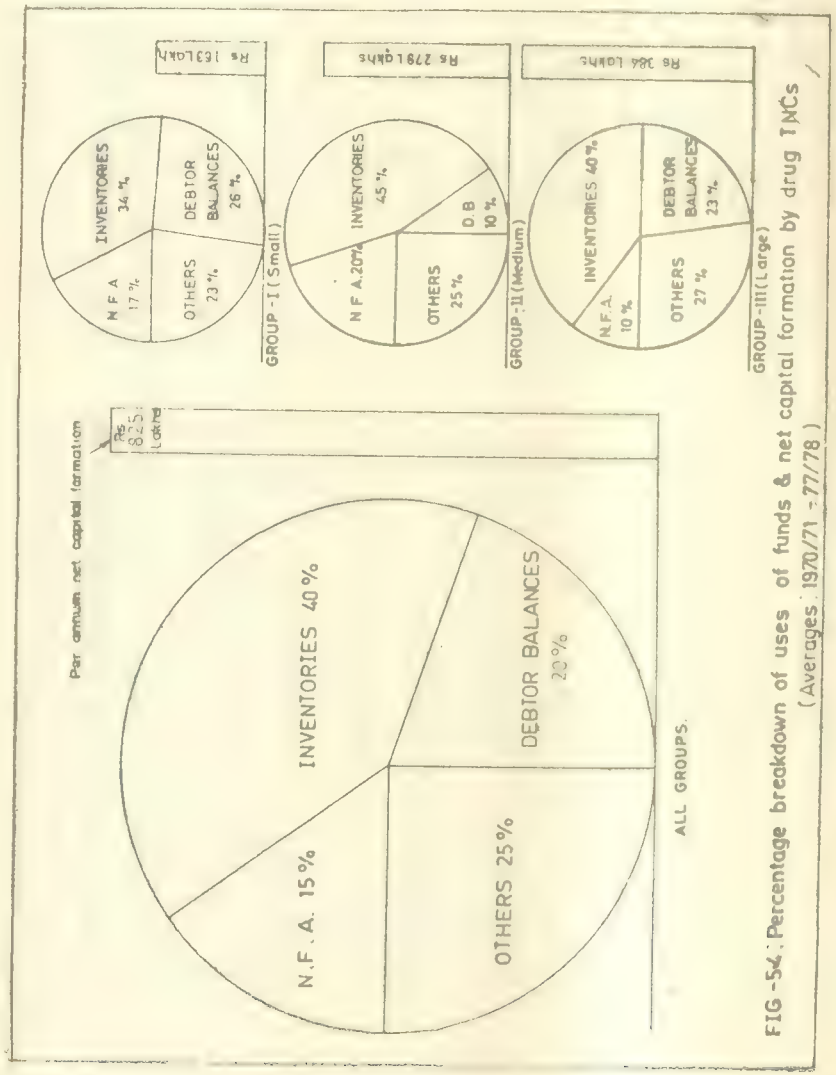


FIG -54 : Percentage breakdown of uses of funds & net capital formation by drug TNCs (Averages 1970/71 - 77/78)

two-year duration of the credit squeeze, 1974-76, especially in 1975-76 there is a sudden decline in both the net fixed assets formation and inventories and also in the debtor, cash and bank balances. Whatever additions to fixed assets and inventories have occurred are by way of utilisation of liquid balances. As regards net capital formation, the data for the period 1970-71 to 1977-78 show that this group added Rs. 1138 lakhs worth of net capital to the business over these eight years, indicating an average annual net addition of Rs. 163 lakhs.

With respect to the second group, the eight-year average shows that 20 per cent of additional funds raised every year are used by this group for the expansion of fixed assets, 45 per cent are used for inventories, 10 per cent go out as debtor balances and 25 per cent are held as cash and bank balances. This group also shows, though, a comparatively reduced impact of the credit squeeze on its acquisition and uses of funds during 1974-76. The data for the period 1970-71 to 1977-78 show that this group added net capital worth Rs. 1950 lakhs to the business, representing an average annual addition of net capital worth Rs. 279 lakhs.

As regards the third group, the eight-year average indicates that a comparatively lower 10 per cent of additional funds raised by this group every year are used for the expansion of fixed assets, 40 per cent are used for inventories, 22 per cent go out as debtor balances, and 27 per cent are held as cash and bank balances. This group does not show any undue impact of the credit squeeze on its additional acquisition and utilisation of funds. However, a larger 81 per cent of total funds raised in 1974-75 are seen blocked in inventories in that year. This group generated net capital to the extent of Rs. 2690 lakhs over the period 1970-71 to 1977-78, depicting an average annual addition of Rs. 384 lakhs worth of net capital to the business.

We notice from the foregoing that out of the three groups, the second group is utilising the highest percentage of its additionally raised funds every year for the formation of fixed assets, followed by the small and large groups. Furthermore, this group has also the highest percentage of additionally raised funds going into inventories, followed by the large and small groups. However, the amount going out as sundry debtors is the highest for the first group followed by the third and second groups. As regards increases in liquid balances, the third group is found holding the

highest amount of additional funds raised every year as cash and bank balances, followed by medium and small-sized firms. It should be mentioned here that earlier we found the ratio of paid-up capital plus long-term borrowings to net fixed assets being greater than one for the large group, indicating the possibility of this group using long-term loans for short-term purposes. An important point worthy of note in Table 5.13 is a relatively high percentage of total funds raised every year going into inventories. It would be worthwhile to further investigate the composition of these inventories to see as to how much of these inventories are raw materials, work in progress, and finished goods. It is possible that a large portion of total inventories of drug companies comprises raw materials which they pile up by way of straight imports or by way of purchases from the STC, both to ensure a steady supply (of raw materials) and also to hedge against inflation.

Aggregate data for the eight years in the case of all the three groups combined show that only 15 per cent of additional funds raised every year by drug MNCs are utilised by them for the acquisition of fixed asset, 40 per cent are used for inventories, 20 per cent go out as debtor balances and 25 per cent are maintained as liquid balances. The fact that drug companies do not spend a large amount of their additionally raised funds on the formation of fixed assets should come as no surprise since the pharmaceutical industry is, as we have noted earlier, highly skill intensive and not capital intensive. As regards net capital formation, column 16 shows that the total net capital added to the business in eight years by all the three groups works out to be Rs. 5778 lakhs, indicating that every year these companies added Rs. 825 lakhs of net capital to their business. Since the net fixed assets formation is lower (26 per cent) a major portion of this (74 per cent) is accounted for by inventories.

Summary

We began this chapter by presenting a general structure of sources of funds for transnational corporations where we found that out of numerous ways of internal, local and foreign sources, internally generated funds and local borrowings, especially bank credit, are the mainstay of financing for these corporations. The empirical data on the sources of funds for drug MNCs in India when examined against this general structure are found to be by and

large in tune with it. At the same time, an examination of capital structure and capital investment data for drug transnationals in India showed that a large portion of their total capital investment in India has been financed through locally 'generated' and 'raised' funds with only about 10 per cent original contributions from parents abroad.

The overall picture shows that total finances (or the total net assets) of drug MNCs in India increased by nearly 100 per cent between 1970-71 and 1977-78. The highest per annum growth in the same has been recorded by small-sized companies (20 per cent), followed by medium-sized companies (13 per cent) and large-sized companies (9 per cent). Internal and external sources have fifty per cent share each in the total finances of drug MNCs. Out of the fifty per cent share of internal finances, reserves and surpluses account for 27 per cent share, provision for 15 per cent and share capital (the capitalised part) for 9 per cent share. Out of the three groups, the large group's reliance on internal funds is the greatest, followed by those of medium and small-sized companies. But the highest per annum growth in reserves—the most important constituent of internal funds—has been recorded by small-sized companies followed by medium and large-sized companies. This results from a larger amount of plough-backs and relatively conservative dividend policies and also because of the slower capitalisation process by small-sized companies as compared to companies of the other two groups.

The distribution of pre-tax profits between taxes, dividends and retained earnings is of the order 60:20:20. And all these are growing at the rate of around 10 per cent per annum. Drug MNCs pay Rs. 20 crores as direct taxes to the government every year. Their dividend rates which are fairly stable work out to be on an average, around 18 per cent on share capital (60 per cent on paid-up capital) and 8 per cent on net worth. Over the years, drug MNCs have systematically ploughed back fifty per cent of their post-tax profits. This has helped them to build up substantial reserves. And on an average every year they capitalise 20 per cent of these reserves to form a part of their share capital.

Out of fifty per cent share of external funds in the total finances of drug MNCs, paid-up capital has 14 per cent share, long-term loans 6 per cent, while short-term loans and sundry creditors command a 15 per cent share each. The small group's reliance on

external funds is the highest, all the constituents of which have also grown at a rate faster for this small group, followed by the medium and large-sized groups. Banks and public deposits account for a majority of long-and short-term loans for all the three groups of companies. A large-scale reliance on public deposits as a means of both long-term and short-term sources of finance seems to be typical of drug MNCs in India. Another important observation in this regard is the ease with which these companies could switch over to non-banking sources, mainly to public deposits, for their long-term financial requirements during the credit squeeze period of 1974-76.

The pattern of uses of funds show that 40 per cent of the additionally raised funds every year are used to hold inventories, 25 per cent are maintained as liquid balances, 20 per cent go out as debtor balances and only 15 per cent are used for fixed assets formation. There are no significant inter-group differences though the medium group on an average has the highest rate of fixed assets formation and also of inventories held up followed by the other two groups. But the per annum net capital formation (in absolute amount) is the highest for the third group. Net fixed assets have only one-fourth share in the net capital formation, the balance being accounted for by inventories. In eight years, 1970-71 to 1977-78, drug MNCs added net capital worth Rs. 5778 lakhs, indicating an annual net capital formation rate of Rs. 825 lakhs.

Notes and References

1. C. Park and J.W. Gladson, *Working Capital*, Macmillan, 1963, p. 12.
2. S.M. Robins and R.B. Stobaugh, *Money in the Multinational Enterprise : A Study in Financial Policy*, London, Longman, 1974, pp. 63-71.
3. *Ibid.*
4. M.Z. Brooke and H.L. Remmers, *The Strategy of Multinational Enterprise : Organisation and Finance*, London, Longman, 1970, p. 191.
5. *Ibid.*, p. 194. The study however states that such funds from the parent company have been significant but in the aggregate not a major source of finance for foreign subsidiaries.
6. W.A.P. Manser, "The Financial Role of Multinational Enterprise : Recruitment of Capital" in *Multinational Enterprise and Monetary Aspects*, J.S.G. Wilson and C.F. Scheffer (Eds.), London, Sijthoff, 1974.
7. The rise in percentage terms can hardly be imagined : 1919900 per cent !

8. Everywhere henceforth the overall rise indicates the increase between two end-periods—1970-71 to 1977-78—but the average annual increase has been calculated by averaging year-to-year percentage change over 1970-71 to 1977-78.
9. Small-sized companies have a comparatively higher relative dispersion with a smaller mean in relation to the larger group.
10. An upper limit of 15 per cent has now been placed by RBI on such deposits raised by NBCs. There is also a limit on the quantum of deposits a company may raise from the public and also the shareholders.
11. It is, however, argued that a certain degree of risk is an inevitable concommitant to higher interest rates offered by these companies on deposits.
12. Reserve Bank of India, Report of the Study Group on Non-banking Companies (1975), p. 31.
13. *Reserve Bank of India Bulletin*, December 1979, pp. 815-834.

6

Drug Multinationals and India's Balance of Payments

THIS chapter deals with the impact of the operations of drug transnational corporations on India's balance of payments. After highlighting the central problems associated with an undertaking of such an exercise, we measure for the period 1956-80, the share of drug MNCs in the total remittances from the country on account of dividends, interest, technical knowhow fees and royalties. We then examine the outflow of funds by drug MNCs on these accounts against their inflow earnings to see whether they are net earners or spenders of foreign exchange. Towards the end we also discuss in general the issue of transfer pricing related to MNCs' operations abroad and to drug MNCs in India.

Problems of Measurement

One of the principal issues related to the balance of payments with which host countries are concerned is the role of transnational corporations in their trade services and capital flows. MNCs are known to affect a substantial proportion of world trade and financial flows and are thus likely to have a significant influence on the balance of payments of the countries where they operate. But any appraisal of MNCs' influence on the balance of payments of host countries involves formidable problems. There is, for instance, no general consensus over the inclusion of factors affecting this account. Different results can be obtained by their inclusion or exclusion in the inflow/outflow chart of host countries' balance of payments. For example, if the evaluation concentrates on the capital flow of direct investment, the effect on the host country is undoubtedly positive. For the developing countries as a whole,

direct investment amounted to $ 4 billion in 1971—almost half the total official bilateral and multilateral flows. But if the earnings generated by past investment which accrue to the foreign affiliates are deducted from this flow, the net result is generally negative for host countries. Between 1965 and 1970, net foreign direct investment inflow into 43 developing countries was 30 per cent of the investment income outflow. If the oil-producing countries in the same are excluded, inflow works out to be 68 per cent of outflow.[1] Besides the inflow of capital funds, the affiliates also earn foreign exchange by way of exports and sometimes by way of technical and/or management consultancy fees earned abroad.

The outflow of foreign exchange occurs by way of remittances on account of : (i) profits repatriated abroad by branches; (ii) dividends disbursed abroad by subsidiaries; (iii) royalty, technical and management consultancy fees accruing out of sale knowhow; (iv) imports on account of capital goods and/or raw materials; and (v) head office expenditures of branches.

The difference between the total inflows and total outflows shows in monetary terms the positive or negative impact of MNCs' operations on host countries' balance of payments. An important issue here is whether or not to include on the inflow side a part of retained earnings of foreign companies. It is sometimes suggested that in cases where indigenous technology is not available at all, the whole of retained earnings should be deemed as contributions to foreign exchange. But where indigenous skills are available, all the retained earnings should not be included on the inflow side. But some people also argue that the retained earnings are funds generated from operations within the country without any transfer of resources having taken place from abroad and hence as such should not be deemed equivalent to fresh flow of funds from abroad.

The determination of positive or negative impact of MNCs on the host countries' balance of payments is further complicated by the fact that there are certain invisible costs of foreign capital which, though not precisely quantifiable, have serious balance of payments implications in them. These are the transfer pricing practices followed on a large scale by foreign companies all over the world. Host countries' vulnerability to transfer pricing arises from the fact that a large part of trade these days is represented by intra-company sales. In the UK, for instance, half of the

exports of US affiliates are made to affiliated firms; in Canada as much as three-fourths of all exports of foreign affiliates were accounted for by intra-company sales in 1969. As regard imports, three-quarters of the imports of foreign affiliates in Canada (which amount to one-third of their total purchases) originate with other affiliates and almost all the imports of US affiliates originate in the home country.[2] The magnitude in India may be relatively small.

Another problem in determining the impact of MNCs on the balance of payments of host countries arises due to backward and forward linkages caused by MNCs in these countries. Thus, for instance, to the direct effects could be added the indirect effects resulting from the fact that the incomes and sales promotion generated by affiliates raise the level of income and thus induce higher consumption of imports of finished or intermediate goods and possibly even lower the export supply of some domestically produced goods. At the same time, in so far as the affiliate may serve as "growth pole" stimulating the establishment of complementary domestic industries, it may also generate additional exports from the local production of such firms. Basic to the entire calculation of total trade effects is the question, at present unanswerable, whether the foreign affiliates' output is entirely additional to what would otherwise be produced or whether local replacement of output can be assumed.[3]

Thus any attempt to measure the impact of MNCs on the host countries in which they operate bristles with difficulties. Hence the results arrived at have to be interpreted with caution. Before we set out to analyse the impact of drug transnational corporations on India's balance of payments, we will highlight some of the problems specifically associated with this exercise.

In India, till 1975, there was no compulsion for companies to disclose in their annual accounts, the information concerning earnings and expenditures involving foreign exchange. As a result no systematic data on these items exist in the annual accounts of the companies. Whatever information is available up to 1975 is scattered in records of Lok Sabha debates and a few Government of India and RBI reports. And the earliest year for which data could be had is 1956. But whereas, the aggregate data from 1956 onwards on outflow of various items for all the foreign companies combined could be searched from Lok Sabha debates, the outflow

data of drug companies when pieced together could be had only from 1960 onwards, but that too not for all the companies. The data for 1960-70 could be culled from RBI collaboration reports.[4] But this data is only for majority and minority foreign equity holding companies. No data are available for branches. Moreover, since it is not known as to which foreign companies this data belongs, the data on retained earnings available from other sources cannot be made use of. The data on outflow for 32 firms for the period 1970-75 were traced from another source.[5] But the value of imports and exports of these firms could not be known. These could only be roughly pieced together from Tables 3.19 and 3.21 of Chapter 3 of the present study. The complete inflow-outflow data for the period 1975-76 to 1977-78 were available only for our selected 27 companies. With all these constraints we were somehow able to make a complete inflow/outflow chart of earnings and remittances in foreign exchange by drug MNCs in India for the period 1956-80. Needless to emphasise, the net (negative) impact arrived at after piecing together inflow-outflow figures of earnings and remittances in foreign exchange of drug affiliates for this period would be grossly under-estimated. This is because of the very fact that the data for all the foreign drug companies could not be accounted for. Secondly, none of the invisible costs, such as those on account of transfer pricing, have been taken into account. The same of course can be said of the indirect benefits generated by these companies which would by some extent reduce the negative balance.

Before we proceed to examine the positive or negative impact of foreign drug companies on India's balance of payments, we will measure the relative share of remittance of drug companies in the total remittances by all the foreign companies.

Share of Drug MNCs in Total Remittances

Table 6.1 (on page 296) shows the aggregate data on account of remittances by all the foreign companies *vis-a-vis* the drug companies, under four headings : dividends, interest, technical knowhow fees and royalty for the twenty-four-year period, 1956-57 to 1979-80. The aggregate figure on account of dividend remittances for all the companies shows that they increased from Rs. 7.10 crores in the mid-50's to Rs. 19.40 crores in the mid-60's and further to Rs. 34.14 crores by the end of the 70's. The dividend

TABLE

Remittances on Account of Service Payments by all MNCs

Year	Dividends			Interest		
	Total	Drug TNCs	3 as % of 2	Total	Drug TNCs	6 as % of 5
1	2	3	4	5	6	7
1956-57	7.10	0.50	7.00	2.70	0.01	0.37
1957-58	8.80	0.66	7.50	2.60	0.01	0.38
1958-59	8.30	0.68	8.25	5.20	0.03	0.57
1959-60	11.70	1.00	8.50	6.20	0.04	0.65
1960-61	12.60	1.09	8.65	7.60	0.04	0.53
1961-62	18.50	1.30	7.03	7.20	0.06	0.83
1962-63	21.50	2.00	9.30	4.50	0.09	2.00
1963-64	18.80	1.69	8.99	10.80	0.07	0.65
1964-65	22.00	2.48	11.27	6.20	0.05	0.81
1965-66	19.40	2.34	12.06	9.40	0.07	0.74
1966-67	28.80	2.59	8.99	17.60	0.06	0.34
1967-68	32.70	2.70	8.26	19.40	0.08	0.41
1968-69	30.20	2.78	9.21	19.90	0.11	0.55
1969-70	31.40	3.37	10.73	19.30	0.17	0.88

6.1

vis-a-vis Drug TNCs in India : 1956-57 to 1979-80

(Rs. in crores)

Technical Knowhow			Royalty			Total		
Total	Drug TNCs	9 as % of 8	Total	Drug TNCs	12 as % of 11	Total	Drug TNCs	15 as % of 14
8	9	10	11	12	13	14	15	16
1.20	0.08	6.67	1.20	0.03	2.50	12.20	0.62	5.08
1.50	0.10	7.30	0.90	0.02	2.22	13.80	0.79	5.72
1.75	0.12	6.86	1.30	0.05	3.85	16.55	0.88	5.32
2.00	0.15	7.50	1.80	0.06	3.30	21.70	1.25	5.76
2.50	0.19	7.60	2.50	0.07	2.80	25.20	1.39	5.52
3.10	0.23	7.42	2.40	0.10	4.17	31.20	1.69	5.42
2.80	0.13	4.64	3.60	0.07	1.94	32.40	2.29	7.07
2.30	0.13	5.65	4.60	0.06	1.30	36.50	1.95	5.34
3.60	0.06	1.67	4.40	0.19	4.32	36.20	2.78	7.68
7.00	0.05	0.71	3.00	0.13	4.33	38.80	2.59	6.67
10.40	0.11	1.06	5.10	0.14	2.75	61.90	2.90	4.68
14.70	0.16	1.09	4.30	0.10	2.33	71.10	3.04	4.28
18.00	0.03	0.17	4.70	0.10	2.13	72.80	3.02	4.15
13.10	0.24	1.83	5.70	0.58	10.18	69.50	4.36	6.27

(Contd.)

TABLE

1	2	3	4	5	6	7
1970-71	48.50	4.44	9.15	20.20	0.20	0.99
1971-72	38.90	3.83	9.85	18.20	0.18	0.99
1972-73	39.00	3.44	8.82	21.20	0.25	1.18
1973-74	37.50	4.19	11.17	21.50	0.26	1.20
1974-75	18.30	1.05	5.74	46.30	0.50	1.08
1975-76	24.80	2.47	9.96	32.10	0.89	2.77
1976-77	48.50	3.95	8.14	34.70	0.15	0.43
1977-78	32.28	4.57	14.16	33.65	0.11	0.33
1978-79	30.97	3.01	9.72	36.69	0.41	1.12
1979-80	34.14	3.50	10.25	34.29	0.39	1.14
Total	625.69	59.63	9.55	437.43	4.23	0.97

Notes

1 (a) The remittances of drug TNCs for the period 1960-61 to 1963-64 include data for 36 companies: 20 majority equity subsidiaries (foreign equity above 50 per cent) and 16 minority foreign equity subsidiaries (foreign equity up to 50 per cent). And the data for the period 1964-65 to 1969-70 include remittances by 40 companies: 20 majority and 20 minority equity holding companies.

(b) The data for drug TNCs for the period 1970-71 to 1972-73 are for 40 companies, 32 with foreign equity above 40 per cent and 8 with foreign equity up to 40 per cent.

6.1 (*Contd.*)

8	9	10	11	12	13	14	15	16
20.60	0.24	1.17	5.10	0.16	3.14	94.40	5.04	5.34
13.90	0.10	0.72	5.90	0.25	4.24	76.90	4.36	5.67
11.40	0.24	2.11	7.30	0.35	4.79	78.90	4.28	5.42
14.10	0.28	1.99	6.20	0.24	3.87	79.30	4.97	6.27
12.60	0.02	0.16	8.50	0.01	0.12	85.70	1.58	1.84
25.60	0.42	1.64	10.50	0.73	6.95	93.00	4.51	4.85
37.80	0.33	0.87	15.90	0.84	5.28	136.90	5.27	3.85
22.53	0.11	0.49	10.28	0.94	9.14	98.74	5.73	5.80
24.63	0.22	0.89	11.30	0.63	5.58	103.59	4.27	4.12
27.64	0.27	0.98	12.00	0.79	6.58	108.07	4.95	4.58
294.75	4.01	1.36	138.48	6.64	4.79	1495.35	74.51	4.98

(c) Total remittances of profits by all TNCs for the period 1956-57 to 1979-80 are Rs. 376.15 crores. Separate data pertaining to remittance on account of profits of branches on drug TNCs are not available. However, for the period 1970-71 to 1975-76 the dividend remittances data of foreign drug companies are inclusive of profits remittances.

2. The data from 1975-76 to 1977-78 are for our sample 27 drug companies only.

Sources : (1) Lok Sabha and Rajya Sabha Debates, several issues.
(2) Reserve Bank of India Collaboration Reports (1968 & 1974) and Bulletin, various issues.
(3) Ministry of Petroleum, Chemicals and Fertilisers, GOI, Indian Drugs Statistics, 1977.
(4) Company Annual Accounts/Reports.

remittances by drug companies also registered a steady rise during this period from Rs. 0.50 crores to Rs. 2.34 crores and further to Rs. 3.50 crores. Drug companies account for a larger share (between 7 per cent and 14 per cent) in the total dividend remittances from the country. The aggregate for the period 1956-57 to 1979-80 shows that the total outflow of foreign exchange on account of dividend remittances during this period is Rs. 624.69 crores in which the share of drug companies is Rs. 59.63 crores (9.55 per cent). This means that although the flow figure on an annual basis seems small, the cumulative burden for the period 1956-57 to 1979-80 is quite large.

Aggregate remittances on account of interest payments by all the foreign companies rose steadily from Rs. 2.70 crores in 1956-57 to Rs. 9.40 crores in 1965-66, and nearly doubled to Rs. 17.60 crores the very next year. They continued to rise, rather erratically, till 1979-80, the year in which they are placed at Rs. 34.29 crores. The interest remittances by drug companies though rose steadily during this period, from Rs. 0.01 crores in 1956 57 to around Rs. 0.20 crores in the 70's, had usually less than one per cent share in total interest remittances from the country. The aggregate interest remittances by all the companies during the period 1956-57 to 1979-80 are placed at Rs. 437.43 crores. In this, the share of drug companies is Rs. 4.23 crores (0.97 per cent).

The column depicting the remittances on account of technical knowhow fees shows that all the companies together remitted around Rs. 3.00 crores every year till 1964-65. But the remittances more than doubled to Rs. 7.00 crores the very next year followed by a continuous rise thereafter. They were expected to reach Rs. 27.64 crores by the end of 1979-80. The remittances on account of technical knowhow fees by drug companies had been usually less than Rs. 1.00 crore during the period 1956-57 to 1979-80. But their share in the total remittances was as high as 6.67 per cent in 1956-57 and was more than 5 per cent till 1963-64, after which it steadily fell and ranged between 0.16 and 2 per cent till 1979-80. The aggregate remittances on account of technical knowhow fees by all the foreign companies, for the entire twenty-four-year period, 1956-57 to 1979-80, are placed at Rs. 294.75 crores. In this, the share of drug companies is Rs. 4.01 crores (1.36 per cent).

Finally, the aggregate remittances on account of royalties by all the foreign companies rose from Rs. 1.20 crore in 1956-57 to

Rs. 5.70 crores in 1969-70 and further to Rs. 12.00 crores by the end of 1979-80. And although the drug companies remitted less than Rs. 1.00 crore annually on this account during the entire period 1956-57 to 1979-80, their share in the total remittances in most of the years is more than 2 per cent. And it went as high as 10.18 per cent in 1969-70 and stood around 5 per cent in the second half of the seventies. The aggregate remittances on account of royalties for the twenty-four-year period 1956-57 to 1979-80 adds upto Rs. 138.48 crores, in which the share of drug companies is Rs. 6.64 crores (4.79 per cent).

An important point to be noted here is regarding a distinct rise in outward remittances on account of dividends, interest, technical knowhow fees and royalties from 1966 onward. The Indian rupee was devalued in 1966 and since the service payments are usually denoted in foreign currency, a fall in exchange rate invariably results in an increase in outflow incurred in local currency. In the last chapter we had pointed out that parent organisations and also sister affiliates would transfer funds to their fellow affiliates if it is expected that the currency of the country of the debtor affiliate is on the verge of devaluation. The reason is that after devaluation the creditor concern would get back much more than what it would have lent. In the absence of any factual data one cannot emphatically say that this would have happened in the case of foreign affiliates operating in India in 1966. This possibility, however, cannot be entirely ruled out since the devaluation of Indian rupee at that time was expected. An indirect evidence that lends support to this hypothesis is the interest payments on loans which, as we saw above, nearly doubled in 1966-67.

Total remittances on all the four accounts—dividends, interest, technical knowhow fees and royalties—for the entire 24-year-period, 1956-57 to 1979-80, stands at Rs. 1,495.35 crores (Col. 15). The share of drug companies in this is Rs. 74.51 crores (Col. 16). This means that the annual outflow of foreign exchange from the country on these four accounts is a staggering Rs. 62 crores and the share of foreign drug companies in this is Rs. 3 crores, that is, 5 per cent. The year-wise data (Col. 17) show that during this twenty-four-year period the annual percentage share of foreign drug companies in the total remittances has been more or less consistent around 5 per cent.

Drug MNCs' Foreign Exchange Earnings and Remittances

In the preceding section we examined the extent of remittances under various accounts by foreign companies *vis-a-vis* drug companies. We now examine an inflow/outflow chart of foreign exchange earnings and expenditures of the latter to see if they have been net earners or spenders of foreign exchange. On the inflow side we place earnings on account of exports and miscellaneous receipts (e.g., consultancy and commission fees) and on the outflow side the outgo of foreign exchange on account of imports, dividends, interest, technical knowhow fees, royalties and miscellaneous payments. Owing to the limitations of data explained earlier, inflows on account of original foreign equity are not included in the chart. However, as Table 5.3 of Chapter 5 shows, the inflows on this account are not substantial.[6]

Table 6.2 depicts the various items of earnings and remittances of foreign exchange by foreign drug companies, the trends of which over the period 1956-57 to 1979-80 have just been explained. Column 12 in the table shows the trade balance of these companies, which it can be seen is negative throughout this 24-year period. And this negative trade balance during each year is substantial. The annual average for 24 years shows that imports of foreign drug companies outweigh exports by Rs. 4 crores. Share of imports in the total outflow is also the highest (74.24 per cent), followed by dividends (20.10 per cent), royalties (2.24 per cent), interest payments (1.43 per cent), technical knowhow fees (1.35 per cent) and miscellaneous expenditures (0.64 per cent).

A breakdown of imports for the three-year period 1975-76 to 1977-78, for our three groups of companies appears below in Table 6.3. This table shows that raw materials and components constitute the highest percentage of total imports—around 95 per cent of the total—followed by imports on account of capital goods, stores and spares. It is important to note that to the extent imports of raw materials are essential they raise the value of domestic product in which case imports are a net foreign exchange saver. At the same time if the exports of affiliates are substantial they would not only cover the cost of imported raw materials but would also bring in additional foreign exchange. But if imports tend to outweigh exports and if this continues over a long period of time, this calls for an examination of constraints on drug exports. To analyse the constraints on exports, one would like to know more about the

potential markets. These potential markets (net importers of drugs and pharmaceuticals) can be ascertained from a network table on International Trade in drugs pharmaceuticals. Such a table which would list out the sources and destinations of drugs and pharmaceuticals will reveal which country is dominant in this trade. If it turns out that this trade is under the thumb of parent companies it would be then difficult to accept that subsidiaries in the rest of the world would go to these markets and make inroads into the domain of their parents. Such a structural factor may have inhibited the export growth of Indian subsidiaries of drug MNCs. To test the veracity of this possibility requires, as said above, a world network of imports of drugs and pharmaceuticals. For want of detailed information we could not undertake this exercise.

Reverting to Table 6.2, columns 10 and 11 show respectively the aggregate items of inflow and outflow and column 13 the balance of the two. This balance, it can be seen, is negative for the entire period, 1956-57 to 1979-80 (also Figure 6.1). The total excess outflow of foreign exchange during this period stands at a staggering figure of Rs. 172.53 crores. This means, on an average, during this period, the foreign drug companies have annually remitted Rs. 7.19 crores in excess of what they earned.

It should be noted in passing that the outflow under the heading 'miscellaneous' in column 9 shows that the expenditure under this account for the three-year period 1975-76 to 1977-78, for which the figures are available, are no less than Rs. 1.90 crores. On the other hand, the earnings under this 'miscellaneous' heading for the similar years are only Rs. 0.54 crores. If proper figures for the entire period under study were available, the outflow of foreign exchange under this miscellaneous heads could be substantial, thereby increasing the total net outflows.

Clandestine Remittances : The Transfer Pricing Practices

One of the most effective methods of transferring funds from one country to another, used extensively by MNCs the world over, is that of under- and over-invoicing of trade transactions. The process is called transfer pricing and is used not only with regard to intra-firm trade of goods, whether finished, intermediates or raw materials, but also for services including royalties, management and technical knowhow fees, and interest on loans. MNCs resort

TABLE 6.2

An Inflow/Outflow Chart of Foreign Exchange Earnings and Remittances of Multinational Drug Companies in India : 1956-57 to 1979-80

(Rs. in crores)

Year	*Inflow*		*Outflow*						*Total inflow (2+3)*	*Total outflow (4+5+6+7+8+9)*	*Trade balance (2−4)*	*Balance inflow (+) outflow (−) (10−11)*
	Exports	*Misc*	*Imports*	*Dividends*	*Interest*	*T. Know-how*	*Royalty*	*Misc*				
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
1956-57	0.31	—	5.10	0.50	0.01	0.08	0.03	—	0.31	5.72	—4.79	—5.41
1957-58	0.32	—	5.07	0.66	0.01	0.10	0.02	—	0.32	5.86	—4.75	—5.54
1958-59	0.32	—	4.86	0.68	0.03	0.12	0.05	—	0.32	5.74	—4.54	—5.42
1959-60	0.29	—	4.68	1.00	0.04	0.15	0.06	—	0.29	5.93	—4.39	—5.64
1960-61	0.30	—	6.10	1.09	0.04	0.19	0.07	—	0.30	7.49	—5.80	—7.19
1961-62	0.30	—	4.80	1.30	0.06	0.23	0.10	—	0.30	6.49	—4.50	—6.19
1962-63	0.40	—	4.90	2.00	0.09	0.13	0.07	—	0.40	7.19	—4.50	—6.79
1963-64	0.30	—	3.80	1.69	0.07	0.13	0.06	—	0.30	5.75	—3.50	—5.45
1964-65	2.00	—	4.00	2.48	0.05	0.06	0.19	—	2.00	6.78	—2.00	—4.78
1965-66	2.20	—	4.70	2.34	0.07	0.05	0.13	—	2.20	7.29	—2.50	—5.09
1966-67	3.40	—	6.20	2.59	0.06	0.11	0.14	—	3.40	9.10	—2.80	—5.70
1967-68	3.60	—	6.40	2.70	0.08	0.16	0.10	—	3.60	9.44	—2.80	—5.84
1968-69	1.30	—	6.30	2.78	0.11	0.03	0.10	—	1.30	9.32	—5.00	—8.02
1969-70	2.10	—	6.70	3.37	0.17	0.24	0.58	—	2.10	11.06	—4.60	—8.96
1970-71	4.51	—	8.00	4.44	0.20	0.24	0.16	—	4.51	13.04	—3.49	—8.53
1971-72	4.56	—	8.50	3.83	0.18	0.10	0.25	—	4.56	12.86	—3.94	—8.30
1972-73	5.04	—	9.15	3.44	0.25	0.24	0.35	—	5.04	13.43	—4.11	—8.39
1973-74	6.50	—	7.47	4.19	0.26	0.28	0.24	—	6.50	12.44	—0.97	—5.94
1974-75	7.80	—	8.50	1.05	0.50	0.02	0.01	—	7.80	10.08	—0.70	—2.28
1975-76	11.52	0.13	12.27	2.47	0.89	0 42	0.73	0.48	11.65	17.26	—0.75	—5.22
1976-77	13.58	0.11	15.28	3.95	0.15	0.33	0.84	0.65	13.69	21.20	—1.70	—6.59
1977-78	16.22	0.30	19.95	4.57	0.11	0.11	0.94	0.77	16.52	26.45	—3.73	—9.20
1978-79	17.3	—	24.99	3.01	0.41	0.22	0.63	—	17.30	29.26	—7.69	—11.96
1979-80	19.38	—	32.49	3.50	0.39	0.27	0.79	—	19.38	37.44	—13.11	—18.06
	123.55	0.54	220.21	59.63	4.23	4.01	6.64	1.90	124.09	296.62	—96.66	172.53

Source : As of Table 6.1.

TABLE 6.3

Breakdown of Imports of Multinational Drug Companies

(*Rs./Lakhs*)

Group & year	*Raw materials components etc.*	*Capital goods*	*Stores & spares*	*Miscellaneous*	*Total*
1	*2*	*3*	*4*	*5*	*6*
Group I					
1975-76	166.13 (97.24)	3.95 (2.31)	0.76 (0.45)	—	170.84
1976-77	208.91 (93.51)	12.89 (5.77)	1.61 (0.72)	—	223.41
1977-78	257.40 (98.29)	0.41 (0.16)	4.06 (1.55)	—	261.87
Group II					
1975-76	332.05 (96.15)	6.83 (1.98)	2.37 (0.69)	4.09 (1.18)	345.34
1976-77	376.23 (96.27)	3.25 (0.83)	11.00 (2.81)	0.32 (0.09)	390.80
1977-78	458.82 (97.96)	4.57 (0.98)	4.65 (0.99)	0.34 (0.07)	468.38
Group III					
1975-76	690.07 (97.08)	2.09 (0.29)	5.96 (0.84)	12.71 (1.79)	710.83
1976-77	851.02 (93.09)	49.04 (5.36)	8.50 (0.93)	5.63 (0.62)	914.19
1977-78	1206.22 (95.40)	23.33 (1.85)	11.95 (0.95)	22.80 (1.80)	1264.30
Groups I-III					
1975-76	1188.25 (96.84)	12.87 (1.05)	9.09 (0.74)	16.80 (1.37)	1227.01
1976-77	1436.16 (93.96)	65.18 (4.26)	21.11 (1.38)	5.95 (0.40)	1528.40
1977-78	1922.44 (96.38)	28.31 (1.42)	20.66 (1.04)	23.14 (1.16)	1994.55

Note : Figures in brackets indicate percentages of the total.
Source: Company Annual Accounts/Reports.

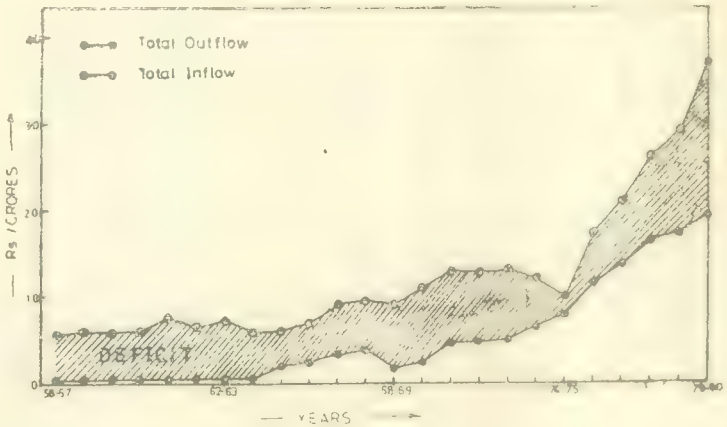


Fig. 6.1 : Foreign exchange inflow and outflow by Drug TNCs : 1956-57—1979-80.

to transfer pricing for the following advantages : (a) To attain or maintain the market power or to penetrate into the new markets; (b) To lessen the impact of price controls; (c) To minimise taxes and other payments to governments; (d) To circumvent exchange controls and to hedge against currency changes. Besides these advantages, transfer prices may be manipulated for a variety of other reasons such as : (i) In order to disguise the level of profits of the subsidiary and increase the share of profits of the parent company; (ii) In order to shift profits from the subsidiary to the parent company so as to reduce the pressure from labour unions for higher wages or from governments for higher local participation or nationalisation.[7]

With an increase in intra-firm trade, the inducement to resort to transfer pricing is great. The inducement to overpricing or underpricing of goods and services may be greater in developing than in developed countries for a number of reasons, including the following : (a) MNCs in developing countries frequently hold monopoly positions, because of the relatively small size of internal markets; (b) Import controls prevent import competition and enable monopoly profits to be made that are perhaps higher than would otherwise be the case; (c) Limitations, *inter alia*, on dividend remittances and royalty payments induce corporations to look for

alternative ways of remitting profits and payments; (d) Price controls limit profit margins.[8]

The internal limits to the use of transfer pricing arise from the fact that if the firm has local equity participation the local shareholders may object to the blatant use of transfer pricing since it would mean a reduction in profits of the firms and a fall in the dividends for the shareholders. Even if the firm has no local equity participation, the communication of requisite knowledge (on taxes—tariffs, controls, policy) from subsidiary to parent and the capacity of the parent firm to process the vast quantity of information on different subsidiaries and to arrive at a determinate set of transfer pricing requires a great deal of skills and can work as an effective internal limitation. The external limits to the use of transfer pricing may arise from the fact that the customs and tax authorities in both the host and the home countries have to be satisfied that there are no too wide a fluctuation in the prices of imports and exports of MNCs.[9]

There are evidences of use of transfer pricing by MNCs in a number of countries. One of the best known cases of its use in the case of drugs (cited earlier in Chapter 4) is that of Roche's tranquilisers chlordiazepoxide and diagepam which it marked under the brand names of Librium and Valium in the U.K. It was found by the Monopoly Commission that the parent supplied to its UK subsidiary the ingredients of these two drugs at respectively £ 370 and £ 922 per kg. against the standard international price of £ 9 and £ 20 per kg. And the funds thus transferred by this overpricing during the period 1966 to 1972 were estimated at £ 22 million, in contrast to the declared profits of only £ 3 million. Roche had ultimately agreed to pay £ 1.85 million to the tax authorities in compensation. Another best known case of the use of transfer pricing relates to Columbia. The investigations carried out for 1968 by the planning office discovered a weighted average of overpricing of 15 per cent for a wide range of pharmaceutical imports. The savings achieved by the subsequent government's action came to $ 3.3 million annually in the pharmaceutical sector, out of a total import bill of $ 15 million.[10]

The issue of transfer pricing is highly sensitive and considerable secrecy shrouds its operations. Unless purposely disclosed, it is very difficult to determine the depth of its prevalence among MNCs. It is, therefore, not surprising that despite the awareness

of its existence, no authentic estimates have been made so far to assess its impact on the host country's balance of payments. The case of India is no different from others. No estimates have so far been made regarding the extent of transfer pricing practices of foreign companies operating in India. In the case of drugs, despite our best efforts we could locate only the following table which gives some indication of the use of transfer pricing by foreign drug companies.

Column 1 in Table 6.4 shows the planned imports of five drugs in 1977-78. Column 2 shows the c.i.f. price at which these drugs were imported by actual users before canalisation and column 3 shows the c.i.f. at which STC imported these drugs after canalisation. It can be seen from column 4 that the extent of overpricing on these five drugs ranges from 24 per cent (in the case of Metronidazole) to 1100 per cent (in the case of Indomethacin). The average overpricing on these drugs works out to be 300 per cent. Assuming that these drugs were imported by actual users before canalisation at prices in column 2, the total outflow of foreign exchange on these drugs would be Rs. 1928.22 lakhs (column 5). However, the same quantum of imports by the State Trading Corporation (STC) would only cost Rs. 756.17 lakhs (column 6). Thus, the excess outflow on five drugs in one year by way of over pricing would be a staggering Rs. 1172.05 lakhs. At present there are some 300 bulk drugs imported by both the STC and the private users.

If one assumes that the trade and services transactions of foreign drug companies operating in India are mainly with their parent companies and sister affiliates abroad and that these transactions are manipulated by a nominal 25 per cent, then the net negative balance of these companies estimated earlier at Rs. 172.53 crores would be further enhanced by Rs. 89.66 crores.[11] The total excess outflow during the period 1956-57 to 1979-80 would thus work out to be Rs. 262.19 crores, enhancing the average annual net outflow from Rs. 7.19 crores to Rs. 10.92 crores.

Summary

The preceding discussion on the impact of drug MNCs on India's balance of payments shows that during the 24-year period 1956-1980, the total remittances from the country on four

TABLE 6.4

Estimates of Overpricing on Five Drugs

Drug	*Quantity of import during 1977-78 (planned kgs)*	*C.I.F. price at which imported by actual users/ imported before canalisation (Rs./kg.)*	*C.I.F. price of imports after canalisation through STC (Rs./kg.)*	*Percent difference between 2 & 3*	*Total cost at which actual users could have imported (1×2) (Rs. lakhs)*	*Total cost if imported by STC (1×3) (Rs. lakhs)*	*Difference (4–5) (Rs. lakhs)*
Indo-methacin	907.18	4320	364.83	1084.11	391.90	3.31	388.59
Trimethoprim	1814.36	2060	561.34	266.98	373.76	10.18	363.58
Centamycin	90.72	70180	35378.30	98.37	636.67	320.95	315.72
Doxycycline	907.18	2037	1608.88	26.61	184.79	145.95	38.84
Metronidazole	18143.6	125 to 250	152.00	23.36	341.10	275.78	65.32
Total	—	—	—	—	1928.22	756.17	1172.05

Source : Lok Sabha Debates. Questions/Answers on Drug Industry, November 1977.

accounts—Dividends, Interests, Technical Knowhow fees and Royalties—amounted to Rs. 1495 crores in which the share of drug MNCs is Rs. 75 crores. Thus, out of average annual remittances of Rs. 62 crores on these four accounts, the drug MNCs account for Rs. 3 crores, that is, 5 per cent. Trade transactions of drug MNCs for the 24-year period show that they imported goods worth Rs. 220 crores and exported goods worth Rs. 124 crores, leaving a trade deficit of Rs. 96 crores. This means annually imports outweighed exports by Rs. 4 crores; 95 per cent of the imports of drug MNCs account for raw materials and components, the rest by capital goods, stores and spares and miscellaneous items. Thus the total annual remittances of Rs. 3 crores are further enhanced by Rs. 4 crores on account of trade balance, depicting that more than 50 per cent of the total annual outflow of Rs. 7 crores by drug MNCs is accounted for by imports. With 25 per cent adjustment for transfer pricing on services and trade transactions, the annual net outflow of funds from the country by drug MNCs works out to be Rs. 11 crores.

Notes and References

1. UN, Multinational Corporations in World Development, 1973, p. 54.
2. *Ibid.*, p. 56.
3. W.A.P. Manser, "The Financial Role of Multinational Enterprise: Recruitment of Capital" in J.S.G. Wilson & C.F. Scheffer (ed.) *Multinational Enterprise, Financial and Monetary Aspects*. London, Sijthoff. 1974, p. 55.
4. Reserve Bank of India, Report of the Survey of Foreign Collaboration in Indian Industry, 1968 and 1974.
5. Ministry of Petroleum Chemicals and Fertilisers, GOI, Indian Drugs Statistics, 1977.
6. It was estimated that the 'actual' contribution (excluding bonus) of parents in total share capital of their subsidiries in India is only around 10 per cent.
7. UNCTAD, Dominant Position of Market Power of Transnational Corporations, Use of Transfer Price Machanism, 1978, p. 7.
8. *Ibid.*, p. 8.
9. Sanjaya Lall, "Transfer Pricing by Multinational Manufacturing Firms," *Oxford Bulletin of Economics and Statistics*, Vol. 35, August 1973, p. 180.
10. *Ibid.*, p. 186.
11. Exports Rs. 220.21 crores+Imports Rs. 123.55 crores+Royalties Rs. 6.64 crores+Interest Rs. 4.23 crores+Technical knowhow fees Rs. 4.01 crores. Total=Rs. 358.64×25 per cent=Rs. 89.66 crores.

7

Conclusion

The study highlights the following facts and conclusions.

Drug transnational corporations enjoy tremendous 'market power' in India. This 'market power' is reflected in their monopolistic and oligopolistic hold on various drug-specific sub-markets in the country. Furthermore, owing to their extensive promotional campaigns and established brand names, these corporations successfully differentiate their products from others even in the competitive segment of the markets crowded by multiplicity of producers. These factors and a fast-growing Indian market protected by high tariff walls and other import restrictions have helped them to record an impressive 'real' and 'financial' growth in their business in India. Drug MNCs account for nearly fifty per cent share in the total drug sales in the country. A high rate of profits on these sales has facilitated the financial growth of these corporations who have systematically ploughed back an average of fifty per cent of their after-tax profits year after year. As a result, they have been able to build up substantial reserves which are capitalised as and when required. In the case of twenty-seven companies which we studied, the net worth in their business in India stands at Rs. 5,710 lakhs—all against an original equity investment of Rs. 767 lakhs. Not only a substantial part of expansion of drug MNCs in India has occurred by way of ploughed-back earnings, but they have also relied equally heavily on the locally borrowed capital which accounts for around fifty per cent share in their total finances. Thus, it can be asserted from these facts that a greater part of expansion of drug MNCs' business in India has occurred through finances 'generated' and 'raised' from within the economy without any fresh capital inflow from abroad. Added to this is the fact that the outflow of funds from

the country by way of dividends, technical knowhow fees, royalties and interest payments have been enormous. These payments for the 24-year period (1956-80) work out to be Rs. 76 crores. At the same time, the outflow durning this period on account of their negative international trade balances in drugs and pharmaceuticals stands at Rs. 97 crores. And these are by any measure conservative estimates on three grounds : first, the data do not pertain to all the foreign drug companies operating in India; secondly, the period covered is 1956-80 whereas, most of these companies already had a place of business in India much before 1956; and thirdly, no adjustments on account of transfer pricings are made.

The conclusions that can be drawn from the foregoing results are clear. Not only the drug MNCs have raised locally a larger part of their total funds employed as capital, over the years of their operations in this country, but they have also acted as net exporters of funds by way of excess of remittances over earnings in foreign exchange. To these results can be added their conspicuous failure to undertake any major research and development work in this country, their increasing import dependence, production of drugs often much in excess of their licensed capacity, and a bewildering array of branded drugs introduced by them. Furthermore, there are rather serious allegations of dumping outdated and banned drugs and drugs at the clinical levels of investigations using the inhabitants of this and also other countries (mostly LDCs) where they operate, as what has come to be known in the literature as—"human guinea pigs."

Concentrating on the central issue, the basic question that can be raised is : What does the growth of drug MNCs in the manner stated above imply ? A continuous rise in investment base by way of ploughed back earnings implies that its effect on balance of payments servicing investment in the short-run is masked. But one day the growth of these companies may become so substantial that the servicing part of it may become enormous. The year-to-year flow effect on current account on account of dividends and other payments could frustrate the import substitution attempts. And the cumulative effect of debt servicing in the absence of expanding exports could lead to a reduction in domestic consumption and investment. What has been stated above becomes evident if we simply understand the peculiar nature of ethical drugs as a consumer product and look at our vast population base growing annually

at a rate of over two per cent. Added to this is the fact that at present only about 25-30 per cent of the total population avail themselves of allopathic medicines. Thus, with the rise in population and real incomes the demand for allopathic drugs is certain to rise, giving more opportunities to drug companies to expand their operations.

Closely related to the economic and financial growth of drug MNCs is the question of their diversification strategies. It would be interesting to know the exact entry points, i e., the original production line for which the licences were granted to all MNCs currently operating in India and the fields they have expanded into over the years of their activities in this country. In our sample we found that most of the companies have gone into the production of a wide range of non-drugs, rather non-essential items like cosmetics, primarily because once settled these companies know how to wade through the bureaucratic hurdles to get things done. It is needless to emphasise the effects of such indiscriminate diversification which ranges from capturing those segments of markets which ultimately would come to be dominated by local concerns, to increased profits and remittances abroad.

Finally, it should be remembered that the pharmaceutical industry stands as a core industry in any country, irrespective of the prevailing economic system. The industry assumes added importance in the case of a country like ours where the purchasing power of the masses is abysmally low and where they are nearly wholly dependent on the State for their health needs. It should also be noted that till today a number of tropical diseases in our country are yet to be successfully overcome. Before any attempt is made to chalk out a detailed public health care system, the companies producing drugs and pharmaceuticals have to be brought under the ambit of successful government control. For, experience has shown that left to themselves these companies have shied off from basic research in drugs and until and unless measures in the nature of legislation are taken, there is little hope that they would cooperate with any public health system proposed to be evolved on a large scale, covering the health of all the individuals in this country. However, it would be unfair not to point out at this juncture the contributions made by these companies to the overall growth of the industry. For, in their quest to dominate this sector,

the transnationals have, indeed, made some irrefutable contributions to the overall growth of the industry.

Any comments on the positive aspects of drug MNCs' operations should begin with the realisation that there was hardly any thing like a pharmaceutical industry when India became independent. The activities of the industry were mainly concerned with the processing and compounding of imported bulk drugs for the production of tablets, capsules, powders and various liquids. Foreign drug companies that came to India after independence filled this vaccum to a large extent. They brought in the necessary technology and have accordingly introduced a wide spectrum of drugs ranging from simple to life-saving in nature. To the extent these companies brought in the knowhow, the credit goes to them. The other aspect of their bringing in substantial capital funds, which is often cited as a powerful factor alongwith their technical knowhow is, however, as we have seen, not correct. The development of the pharmaceutical industry with the help of drug MNCs has also given a tremendous boost to its parent chemical industry and also to a host of other ancillary industries. Large savings in foreign exchange brought about by import substitution are also to be noted. Furthermore, the entire range of modern management practices including scientific manpower development, training of technical personnel, modern marketing methods, and links with key world markets can also be cited as intangible benefits of tremendous importance generated by the drug MNCs' operations. Clearly, many of these plus points cited in defence of drug MNCs cannot be challenged, although it would be a tremendous task to quantify many of these. For one thing, according to our view, if not anything else, the very fact that drugs are *sine qua non* for human survival and that the drug MNCs have all along been producing quality drugs could be the single most important factor that can be forcefully stated in their favour. Millions of working hours saved and also the wide improvement in health-care generated thereof by medicines are such positive aspects that if we regard 'people' and their 'welfare' as our primary concern, these facts in themselves should perhaps be enough to wipe out all the negative aspects of drug MNCs' operations. But does it mean that drug MNCs should be left free of any effective State control? Perhaps not. Despite all these plus points, the sensitive nature of the industry demands that its constituents be continously kept under State

regulations. Let us first examine as to what measure(s) government has taken in this regard. Undoubtedly, the most publicised measure in this connection is the Foreign Exchange Regulation Act promulgated in 1973.

The aims of the Foreign Exchange Regulation Act as envisaged in the policy measures and subsequently clarified were as follows: First, to conserve the country's foreign exchange resources by maximising the inflow through greater exports and minimise the outflow on such accounts as dividends and profits. Secondly, the Act aimed at steering foreign investment into high priority areas requiring sophisticated technology. The level of equity participation to be allowed was to be determined according to the level of technology employed by the company and its export performance. Foreign companies operating in the core sector or exporting 60 per cent of their output could retain 74 per cent equity. For companies not operating in the core sector but employing high technology, the government could fix the permissible foreign equity participation, but in no case foreign equity was to be more than 74 per cent. Companies operating in the non-core sector or engaged in trading activities were not to be allowed equity more than 40 per cent.

The philosophy behind the implementation of the FERA seemed forceful but unfortunately it left a number of loopholes which force one to question the very basic tenets of the Act. At the outset it should be realised that the control of the affairs of the company can still rest with the parent even when it has brought down the equity to 40 per cent. This is because the restrictive clauses in the technology and/or management transfer contracts could always give the parent an upper hand in the overall functioning of the company. Moreover, with say 40 per cent equity resting in a single hand the 60 per cent could be so diversified that no single shareholder would be capable of exercising any control over the company, giving the 40 per cent holder of equity a clear advantage. Secondly, if the firm reducing its equity to 40 per cent does so by way of additional issue of shares (which is actually happening), the base of foreign holding remains constant with the result that the outflow on account of dividends etc., is not reduced. The most serious, rather devastating, drawback of this reduction of equity is that once a company reduces its equity holding to below 50 per cent, it becomes by definition an Indian company.

Consequently, all the restrictions relating to foreign companies such as those of export obligations cease to apply. In addition, the company becomes free to expand in any direction it likes. And with additional capital in hand and avenues available for expansion, the company would not always expand in its line of production but in any field that is profitable, thereby diversifying its operations. Sidelining all these issues for a while, let us assume for a moment that adhering to the FERA regulations, all the foreign companies have diluted their equity to 40 per cent by way of disposing of their excess equity to the residents of this country. How much capital would be repatriated abroad by this process? Since the shares of most of the transnational companies are sold at a premium, it was estimated in 1976 that the outflow of foreign exchange resulting from this dilution of foreign equity would be no less than Rs. 270 crores.[1] This could mean drying off the national resources which would otherwise be invested in alternative and more important projects. In fact, by not dealing with the fundamental issues to control and steer the operations of MNCs and in its stead by hammering into them policies like the FERA, nothing less than an *economic harakiri* has been committed.

Any suggestions for future policy measures should begin with the realisation that there lie a number of difficulties intrinsic to coping with these corporations once they have firmly established themselves in the host countries.[2] In our case, having implemented a nearly irreversible decision like the FERA, what remains to be done to salvage the situation ? Nationalisation is often cited as a possible remedy. This, however, seems to be too drastic a solution, at least at this stage. We should have a viable alternative to deal with the implications of such an action--such as that of possible interruption in the flow of technology from abroad and/or the shortages created on the subsequent withdrawal of foreign firms. For, the nature of the ethical drug as a consumer product, suggests that it would only amount to playing with the lives of millions in case any hasty and improperly planned step is taken. The shortages of drugs, artificial or real, could easily give rise to hoarding, black-marketing and all other such evils to which our markets are so prone. This could easily hold even the rich patients to ransom, not to talk of those belonging to the poorer section. Therefore, before any such step as that of nationalisation is taken, Indian firms, especially the public sector undertakings, should come to

own a larger share of the market for drugs.[3] It should also be suggested here that a proper survey needs to be carried out in respect of units in the small-scale sector. The potential among these should be given all government support to strengthen their position and have greater coordination with the public sector. At the same time, an independent authority such as the 'National Drug Authority' suggested by the Committee on Drugs and Pharmaceuticals (1975) should be formed which would promptly look into matters related to the industry and would also handle any eventualities and brace the industry to cope with matters arising out of any stern government action. This agency, on a priority basis, should look into such issues as the transfer of technology, the question of brand names vs. generic names, transfer pricing and the diversification processes of drug campanies, and suggest appropriate policy measures. Unless all this is done, what seems optional at this point is to suggest the implementation of a set of pragmatic policies towards the whole gamut of issues related to the industry demanding immediate attention: the R & D issue, the price policy, smooth supply of life-saving and other drugs, careful regularisation of excess production, decreasing import dependence, and assuring a 'reasonable' rate of growth to the industry in comparison to the growth of other private sector undertakings in a matrix of private sector empire in the country.

Notes and References

1. Lok Sabha Debates, July, 1977.
2. This realisation, among other things, has perhaps led countries like Japan to rely on the outright purchase of technology or to go about it by way of licensing.
3. In the wake of the current loss-making stature of these undertakings, it would indeed require heroic efforts.

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